Part V: Grade 7

- Test Blueprint
- Test Content
- Sample Items
- Vocabulary List

EDITOR'S NOTE: Some scored student work may contain labeling elements used when the items were pilot tested. These labeling elements are separate and distinct from and are not a part of the test items themselves.

Connecticut Mastery Test – Fourth Generation

Mathematics Grade 7 Test Blueprint

Content Standards and Strands	# of multiple-choice items	# of open-ended items	# of grid-in items
Numerical and Proportional Reasoning			
1. Place Value	**6**		
2. Pictorial Representations of Numbers	**4**	**2**	
3. Equivalent Fractions, Decimals and Percents	**4**		
4. Order, Magnitude and Rounding of Numbers	**6**	**2**	
5. Models for Operations	**2**	**2**	
6. Basic Facts	**NT**	**NT**	**NT**
7. Computation with Whole Numbers and Decimals			**6**
8. Computation with Fractions and Integers	**6**		
9. Solve Word Problems	**2**	**2**	**2**
10. Numerical Estimation Strategies	**4**		
11. Estimating Solutions to Problems	**2**	**4**	
12. Ratios and Proportions	**4**		
13. Computation with Percents			**4**
Geometry and Measurement			
14. Time	**NT**	**NT**	**NT**
15. Approximating Measures	**6**		
16. Customary and Metric Measures	**3**	**1**	**3**
17. Geometric Shapes and Properties	**4**	**2**	
18. Spatial Relationships	**3**	**3**	
Working with Data: Probability and Statistics			
19. Tables, Graphs and Charts	**2**	**2**	
20. Statistics and Data Analysis	**2**	**1**	**2**
21. Probability	**2**	**2**	
24. Classification and Logical Reasoning	**2**	**2**	
Algebraic Reasoning: Patterns and Functions			
22. Patterns	**2**	**2**	
23. Algebraic Concepts	**4**	**2**	**2**
Integrated Understandings			
25. Mathematical Applications		**2**	
TOTAL	**70**	**31**	**19**

***** NT = Strand not tested at this grade level.

Connecticut Mastery Test – Fourth Generation

Mathematics Grade 7 Content

Strand	Grade 7 Concepts/Skills Assessed
1. Place Value	A. Solve problems involving 0.1 MORE/LESS or 0.01 MORE/LESS than a given number. B. Identify alternative forms of expressing whole numbers and decimals using expanded notation. C. Identify alternative forms of expressing numbers using scientific notation.
2. Pictorial Representation of Numbers	A. Relate fractions, mixed numbers, decimals and percents to their pictorial representations and vice versa. B. Identify and/or shade fractional parts of regions or sets, decimals and mixed numbers in pictures.
3. Equivalent Fractions, Decimals and Percents	A. Rename fractions and mixed numbers as equivalent decimals and vice versa. B. Rename fractions and decimals (up to 1.00) as equivalent percents and vice versa.
4. Order, Magnitude and Rounding of Numbers	A. Order whole numbers and decimals. B. Order fractions and decimals including mixed numbers in context. C. Describe magnitude of whole numbers and decimals in and out of context. D. Describe magnitude or order of fractions and mixed numbers in context. E. Round whole numbers, fractions and decimals in context. F. Locate points on number lines and scales, including fractions, mixed numbers, decimals and integers.
5. Models for Operations	A. Identify the appropriate operation or equation to solve a story problem. B. Write a story problem from an equation.
6. Basic Facts	Not tested
7. Computation with Whole Numbers and Decimals	A. Add and subtract 2-, 3- and 4-digit whole numbers, money amounts and decimals. B. Multiply and divide 2- and 3-digit whole numbers, money amounts and decimals by 1-digit numbers and decimals (multiply only). C. Multiply and divide whole numbers and decimals by 10, 100 and 1,000.
8. Computation with Fractions and Integers	A. Add and subtract fractions and mixed numbers with reasonable and appropriate denominators. B. Multiply whole numbers and fractions by fractions and mixed numbers. C. Add positive and negative integers (range -20 to 20).
9. Solve Word Problems	A. Solve one-step story problems involving whole numbers, fractions, decimals and money amounts with or without extraneous information. B. Solve multistep problems involving fractions and mixed numbers with or without extraneous information. C. Solve multistep problems involving whole numbers, decimals, money amounts and mixed numbers, including means. D. Solve multistep problems involving whole numbers, decimals or money amounts, and explain how the solution was determined.
10. Numerical Estimation Strategies	A. Identify the best expression to find an estimate. B. Identify whether and why a particular strategy will result in an overestimate or

Strand	Grade 7 Concepts/Skills Assessed
	an underestimate.
11. Estimating Solutions to Problems	A. Identify a reasonable estimate to a problem. B. Determine a reasonable estimate, and describe the strategy used to arrive at the estimate. C. Given an estimate as a solution, judge its reasonableness and justify the decision.
12. Ratios and Proportions	A. Solve problems involving ratios. B. Solve 1-step problems involving proportions in context.
13. Computation with Percents	A. Find percents of whole numbers or the percent a given number is of another number. B. Solve 1-step problems involving percents in context.
14. Time	Not tested
15. Approximating Measures	A. Estimate lengths, areas and angle measures.
16. Customary and Metric Measures	A. Measure and determine perimeters, areas and volumes. Explain or show how the solution was determined. B. Determine perimeters, areas and volumes. C. Identify appropriate customary or metric units of measure for a given situation. D. Solve problems involving conversions of customary or metric units of measure. E. Solve problems involving conversions of time units.
17. Geometric Shapes and Properties	A. Identify, describe or classify 2- and 3-dimensional geometric shapes and figures. B. Draw, describe and classify 2- dimensional geometric shapes and figures.
18. Spatial Relationships	A. Identify lines of symmetry. B. Draw lines of symmetry. C. Identify congruent and similar figures. D. Identify and explain congruent or similar figures. E. Locate and draw points on grids. F. Identify geometric transformations (reflections, rotations and translations). G. Draw geometric transformations (reflections and rotations). H. Relate 2- and 3-dimensional representations and visa versa.
19. Tables, Graphs and Charts	A. Identify correct information from tables, graphs and charts. B. Create bar graphs, line graphs and stem-and-leaf plots from data in tables and charts.
20. Statistics and Data Analysis	A. Draw reasonable conclusions from data in tables, graphs and charts. B. State a conclusion and explain why an answer is or is not reasonable based on the data. C. Solve problems involving means, medians, modes and ranges of sets of data.
21. Probability	A. Identify correct solutions to problems involving elementary notions of probability and fairness expressed as fractions, decimals or percents. B. Solve problems involving elementary notions of probability and fairness expressed as fractions, decimals or percents and justify solutions. C. Solve problems involving expected outcomes or predictions and justify solutions.
22. Patterns	A. Identify the missing terms in a pattern, or identify rules for a given pattern using numbers and attributes. B. Extend or complete patterns and state rules for given patterns using numbers

Strand	Grade 7 Concepts/Skills Assessed
	and attributes.
23. Algebraic Concepts	A. Solve simple 1- or 2-step algebraic equations. B. Use order of operations. C. Evaluate expressions or solve equations and use formulas. D. Represent situations with algebraic expressions. E. Write an expression to represent a situation.
24. Classification and Logical Reasoning	A. Solve problems involving the organization of data. B. Sort or classify objects, and draw logical conclusions from data including Venn diagrams, combinations, permutations and transitive reasoning questions.
25. Mathematical Applications	A. Solve extended numerical, statistical and spatial problems.

GRADE 7 SAMPLE ITEMS

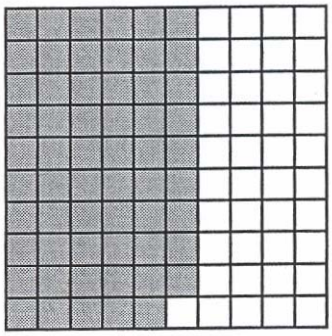
1. Place Value - MC

Which means the same as 39,000?

- ◉ 3.9×10^4
- ○ 3.9×10^3
- ○ 39×10^5
- ○ 39×10^4

2. Pictorial Representation of Numbers - MC

What percent of the grid is shaded?



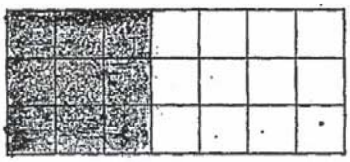
Each □ = 0.01

- ○ 69%
- ◉ 59%
- ○ 58%
- ○ 48%

2. Pictorial Representation of Numbers - OE

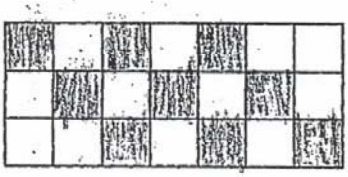
S-1 Shade in $\frac{3}{7}$ of this shape.

S1A Shade in $\frac{3}{7}$ of this shape.



1

S1B Shade in $\frac{3}{7}$ of this shape.

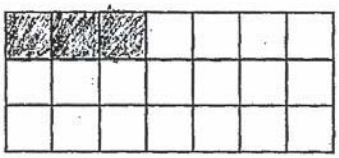


1

S1C Shade in $\frac{3}{7}$ of this shape.

1

S1D Shade in $\frac{3}{7}$ of this shape.



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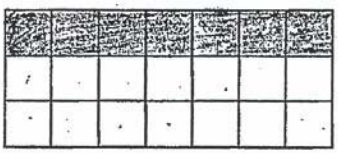
S1E Shade in $\frac{3}{7}$ of this shape.



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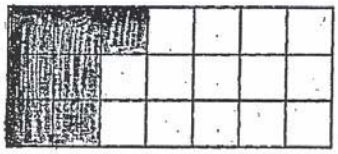
S1F Shade in $\frac{3}{7}$ of this shape.



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3. Equivalent Fractions, Decimals and Percents - MC

A basketball player made $\frac{9}{20}$ of the field goals attempted. What percent names the same amount?

- ○ 20%
- ○ 36%
- ○ 40%
- ◉ 45%

4. Order, Magnitude and Rounding of Numbers - MC

The table below shows the numbers of packages sent by a shipping company over a five-day period.

Shipping Log

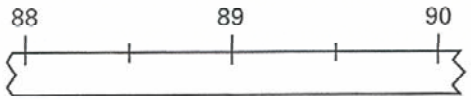
Day	Number of Packages
Monday	324,883
Tuesday	413,443
Wednesday	403,132
Thursday	314,590
Friday	423,062

Which day had a **greater** number of packages sent than Tuesday?

- ○ Monday
- ○ Wednesday
- ○ Thursday
- ◉ Friday

4. Order, Magnitude and Rounding of Numbers - OE

S-2 The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



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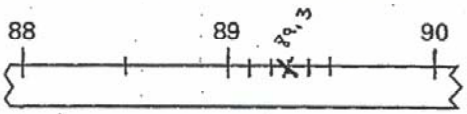
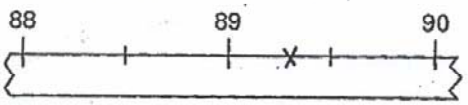
S2A The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



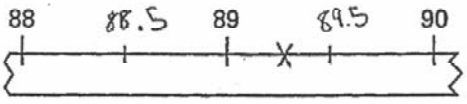
1

S2B The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



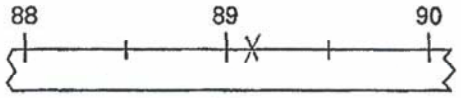
1

S2C The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



1

S2D The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



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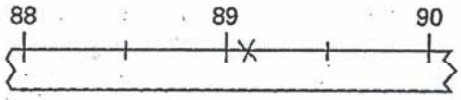
S2E The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



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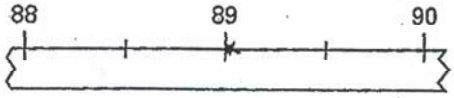
S2F The decibel level at a recent concert was 89.3. Draw an "x" on the scale that shows 89.3.



0

5. Models for Operations - MC

A parade had a marching band made up of 32 rows, with 15 members in each row. Which number sentence could be used to determine how many members were in the band altogether?

- ○ $32 \div 15 = \square$
- ○ $32 - 15 = \square$
- ◉ $32 \times 15 = \square$ ⊛
- ○ $32 + 15 = \square$

5. Models for Operations - OE

Write a story problem that can be solved using the number sentence

$$623 - 49.8 = \square.$$

S2A Write a story problem that can be solved using the number sentence

$623 \div 49.8 = \square$.

I have $623 in My Piggy bank. Then I go out and buy a video game that costs $49.80. How much do I have left.

2

S2B Write a story problem that can be solved using the number sentence

$623 - 49.8 = \square$.

Jan has 623 grams of sugar. She eats 49.8 grams. How much sugar is left after Jan has consumed 49.8 grams of it?

2

S2C Write a story problem that can be solved using the number sentence

$623 - 49.8 = \square$.

The chocolate company had 623 pounds of chocolate chip. They sold 49.8 pauds to the cookie company. How many pounds of chocolate did the have left?

2

S2D Write a story problem that can be solved using the number sentence

$623 - 49.8 = \square$.

There were 623 people at Cody's party. At 7:00, 49.8 people left his party. How many people are still at Cody's party? 1

S2E Write a story problem that can be solved using the number sentence

$623 - 49.8 = \square$.

In 1999 there was 623 car dealerships in Florida. But in 2000 49.8 of the dealerships lost their buisness. How many were left? 1

S2F Write a story problem that can be solved using the number sentence

$623 - 49.8 = \square$.

Izamar has 623 pairs of earrings but her Sister decided to take 49.8 Of them. How many pairs does Izamar have left? 1

12.5 earrings left

S2G Write a story problem that can be solved using the number sentence

$623 - 49.8 = \square$.

On Saturday I went to the mall and I was shopping and I spent in clothes $ 623 them I went to a Restaurant and I spent $ 49.8 now my question is how much do I have left?

0

S2H Write a story problem that can be solved using the number sentence

$623 - 49.8 = \square$.

Suzy Carmichael walked 623 miles, but Angelica C. Pickles walked 49.8 miles. How many miles did Angelica had I left afore she win the race

2.25

0

S2I Write a story problem that can be solved using the number sentence

$623 - 49.8 = \square$.

3 three minumis eight / borrow from 2 / =5

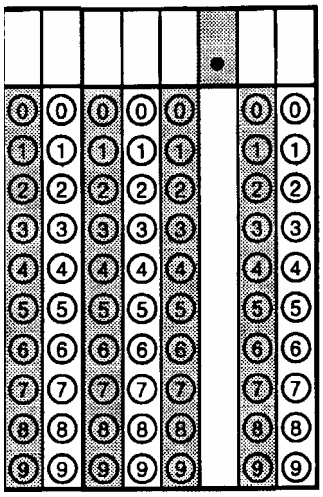
one minumis 9 / borrow from six / =2

five minumus four / one answers is 12.5

0

7. Computation with Whole Numbers and Decimals - GR

1894 ÷ 100 =



8. Computation with Fractions and Integers - MC

$3 + {}^{-}5 =$

- ○ $^{-}8$
- ◉ $^{-}2$
- ○ 2
- ○ 8

9. Solve Word Problems - MC

A shelf in Tricia's garage was 8 feet high. Tricia could reach $6\frac{1}{4}$ feet up. How much farther did Tricia need to reach to touch the shelf?

- ◉ $1\frac{3}{4}$ feet
- ○ $2\frac{1}{2}$ feet
- ○ $2\frac{3}{4}$ feet
- ○ $14\frac{1}{4}$ feet

9. Solve Word Problems - OE

S-3 José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

Which would cost **less**? _____

Show your work or explain how you found your answer.

S3A José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

Which would cost less? 12 pk.

Show your work or explain how you found your answer.

the 12 pack because 12 is half of 24, so 2.79 x2 is less than $5.80.

2

S3B José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

Which would cost less? D pack

Show your work or explain how you found your answer.

$24\overline{)48}^{\,2}$ $12\overline{)48}^{\,4}$

5.80 × 2 = 11.60

2.79 × 4 = 11.16

2

S3C José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

Which would cost less? 12packs for $2.79

Show your work or explain how you found your answer.

$5.80 ÷ 24 ≈ .24 a can $2.79 ÷ 12 ≈ .23

2

S3D José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

Which would cost less? =

Show your work or explain how you found your answer.

There equal amount of money it doesn't matter which one he buys. I did 2.79 x 4 = 11.6 and I also did 5.80 x 2 = 11.6 so he can pick which any one he wants.

1

S3E José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

Which would cost less? 24packs

Show your work or explain how you found your answer.

because, if you add 24+24 it would equal to 48 then you need to multiply $5.80 x 2 to get your answer and it comes to $11.60. Then when you do 12x4 you get 48 then you multiply 2.79 x 4 and comes to $11.16

1

S3F José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

Which would cost less? 12 packs

Show your work or explain how you found your answer.

12 x $2.79 = $33.48
24 x $5.80 = $139.20

12 packs < 24 packs

1

S3G José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

Which would cost less? 24 for $5.80

Show your work or explain how you found your answer.

I found my answer by: It is about 30 ¢ for 1 pack for the $5.80 one, and its about 24¢ for the $2.79 one. If you pay 5.80 for 24 packs, you only pay 60¢ more than 12 packs, and you get double more.

0

S3H José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

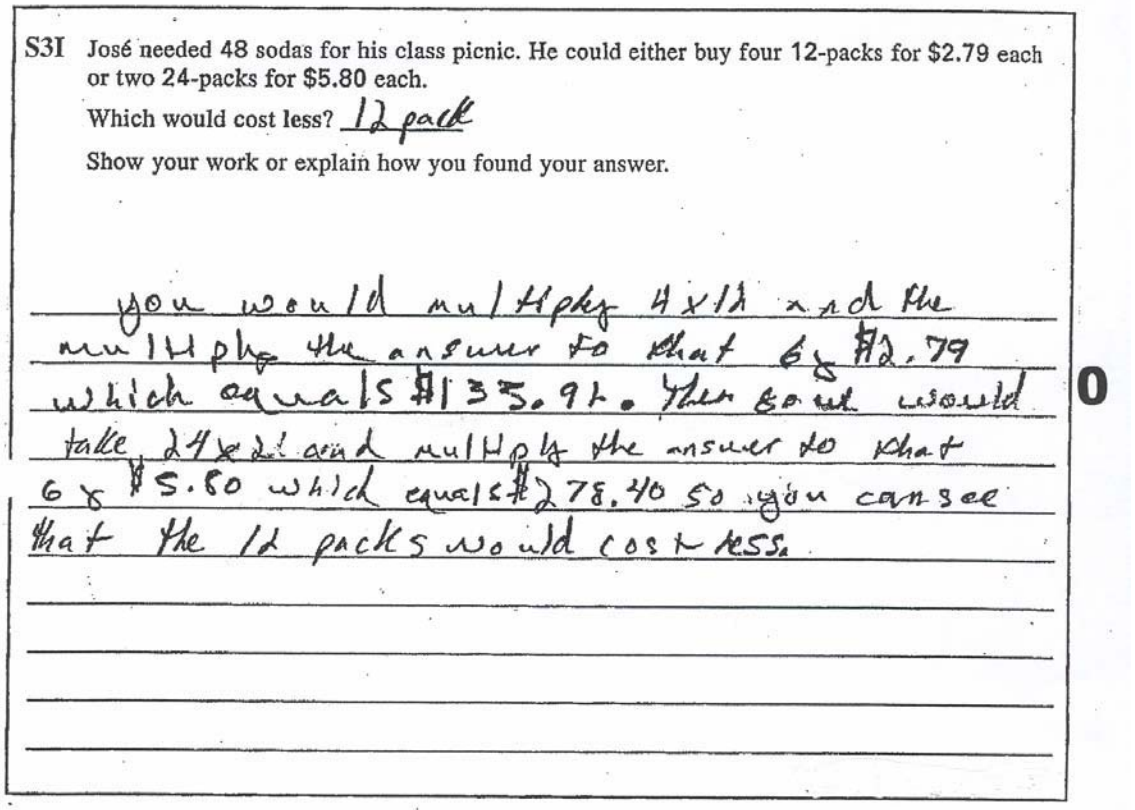
Which would cost less? 24 pack

Show your work or explain how you found your answer.

24÷5.80 = 4.1 and 12÷$2.79 = 4.3.

I know 4.1 is closer to 4 which 4.3 is closer to 4.5. 4.1 is less than 4.5.

0



S3I José needed 48 sodas for his class picnic. He could either buy four 12-packs for $2.79 each or two 24-packs for $5.80 each.

Which would cost less? 12 pack

Show your work or explain how you found your answer.

you would multiply 4 x 12 and the multiply the answer to that by $2.79 which equals $133.92. Then you would take 24 x 2 and multiply the answer to that 6 x $5.80 which equals $278.40 so you can see that the 12 packs would cost less.

0

10. Numerical Estimation Strategies - MC

To estimate the sum of $2.95 and $17.93, Mason added $3 + $18. Would Mason's estimate be more or less than the actual sum?

- ⊙ MORE, because Mason rounded both numbers up
- ○ MORE, because Mason rounded both numbers down
- ○ LESS, because Mason rounded both numbers up
- ○ LESS, because Mason rounded both numbers down

11. Estimating Solutions to Problems - MC

Four people equally shared the cost of a $282.55 graduation present. Which of the following is a **reasonable** amount for how much each person spent?

- ○ **A little less than $60**
- ○ **A little more than $60**
- ○ **A little less than $70**
- ⊙ **A little more than $70** ⊛

11. Estimating Solutions to Problems - OE

S-5 Amy wants to **estimate** 11% of $9.11.

What is a **good estimate** of the answer? _____

Show your work or explain how you made your estimate. _____

S5A Amy wants to **estimate** 11% of $9.11.

What is a **good estimate** of the answer? .99

Show your work or explain how you made your estimate. _____

① 9.11 = 9.00

② 10% = .9 → 9.00

③ 1% = .09 → 9.00

④ .9 + .09 = .99

2

5B Amy wants to **estimate** 11% of $9.11.

What is a **good estimate** of the answer? .9

Show your work or explain how you made your estimate. I made 11% 10% and made $9.11 $9.00. Then I just moved the decimal point.

2

S5C Amy wants to **estimate** 11% of **$9.11.**

What is a **good estimate** of the answer? $1.00

Show your work or explain how you made your estimate. I rounded 9.11 to 9.00 and multiplied $9.00 and .11 I got .99 and rounded it to $1.00

2

S5D Amy wants to **estimate** 11% of **$9.11.**

What is a **good estimate** of the answer? _____

Show your work or explain how you made your estimate. a good estimate of the answer would probly be $1.00 how I got the estimate is because

$$\begin{array}{r} 9.11 \\ \times .11 \\ \hline 9.11 \\ 91.1 \\ \hline 1.0021 \end{array}$$

1

S5E Amy wants to **estimate** 11% of **$9.11.**

What is a **good estimate** of the answer? $0.90

Show your work or explain how you made your estimate. I rounded $9.11 to $9 and 11% to 10% then divided $9 by .10 and got $0.90.

1

S5F Amy wants to **estimate** 11% of $9.11.

What is a **good estimate** of the answer? $1.10

Show your work or explain how you made your estimate.

9.11

9.00 $\frac{11}{100} = \frac{n}{9.00}$

$99 = 100n$

$\frac{99}{100} = \frac{100n}{100}$

$1.1 = n$ $n = 1.10$

1

S5G Amy wants to **estimate** 11% of $9.11.

What is a **good estimate** of the answer? 10%

Show your work or explain how you made your estimate. You should round to the nearest and easiest percent. I chose 10% because it is closer to 11% than other percents — 1%, 5%, 15%, 20%, 50%,

0

S5H Amy wants to **estimate** 11% of $9.11.

What is a **good estimate** of the answer? $10.21

Show your work or explain how you made your estimate.

Work → 9.11 × .11 = 10.021

Multiply 9.11 by .11 (11%) and get the answer.

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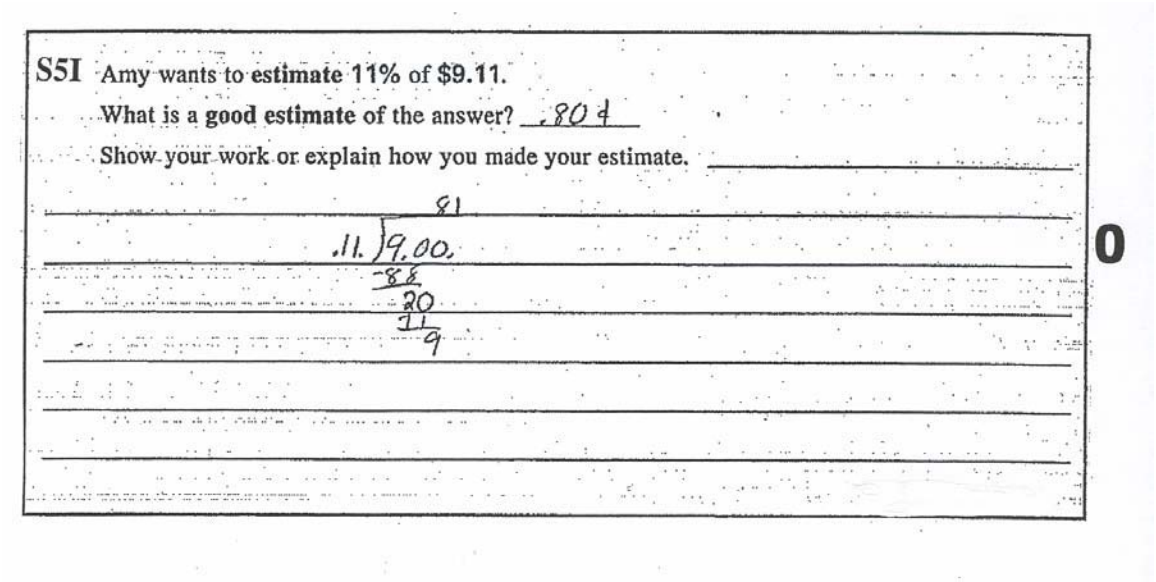


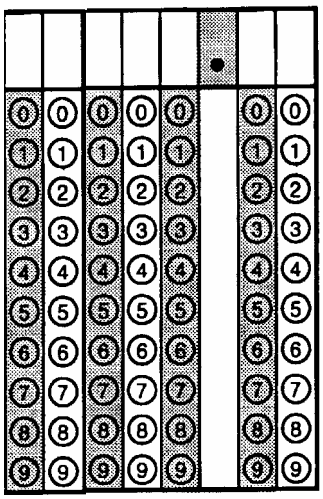
12. Ratios and Proportions - MC

In Mr. Simpson's apple orchard there are 5 green apple trees to every 6 red apple trees. He has 330 green apple trees. How many red apple trees does Mr. Simpson have?

- ○ 55
- ○ 66
- ○ 275
- ◉ 396

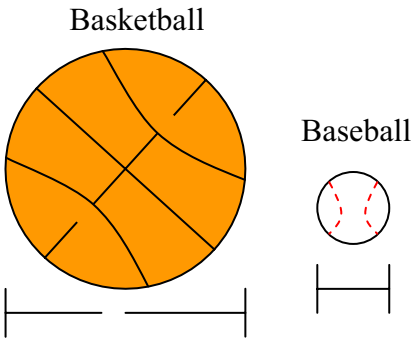
13. Computation with Percents - GR

A dress shop owner put 75% of his 160 items on sale. How many items were on sale?



15. Approximating measures - MC

Look at the baseball and basketball below.

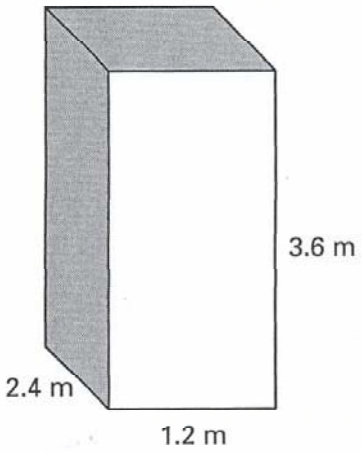


The diameter of the baseball is 7 centimeters. Which is the **best** approximation of the **diameter**, in centimeters, of the basketball?

- ○ 14
- ◉ 21
- ○ 28
- ○ 35

16. Customary and Metric Measures - OE

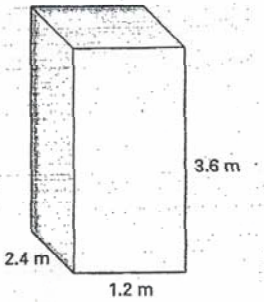
This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



Volume:_____

Show your work or explain how you found your answer.

S5A This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



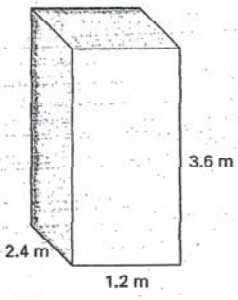
Volume: 10.368 m^3

Show your work or explain how you found your answer.

2

2.4
×1.2
48
+240
288
×3.6
1728
+8640
10.368

S5B This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



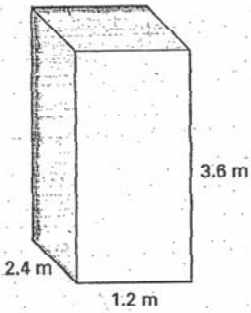
Volume: 10.368

Show your work or explain how you found your answer.

2

1.2x2.4= 2.88x 3.6 = 10.368

S5C This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



Volume: 10.368 m^3

Show your work or explain how you found your answer.

2

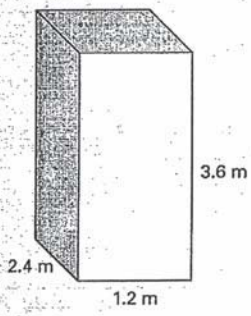
3.6 × 1.2 = 72 + 360 = 4.32

2.4 × 4.32

Length × width × Depth = Volume

3.6 × 1.2 × 2.4 = 10.368

S5D This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



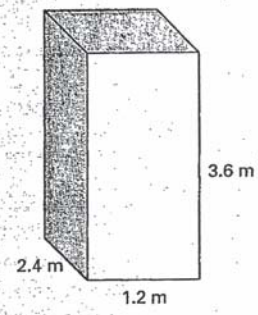
Volume: 103.68

Show your work or explain how you found your answer.

1

3.6
×2.4
144
720
864
× 1.2
1728
864.0
103.68

S5E This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



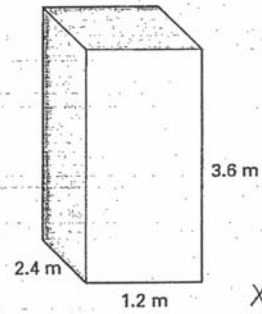
Volume: 1.8928

Show your work or explain how you found your answer.

1

3.6×2.4×1.2=1.5728

S5F This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



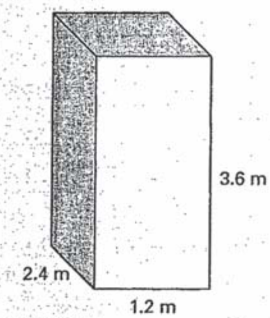
Volume: 10388

Show your work or explain how you found your answer.

43.2 × 2.4 = 103.68; 3.6 × 1.2 = 4.32

1

S5G This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



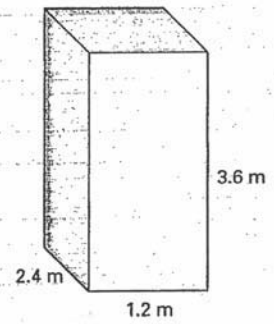
Volume: 14.4

Show your work or explain how you found your answer.

3.6m·2 + 1.2m·2 + 2.4m·2 = 14.4

0

S5H This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



Volume: 31.68m³

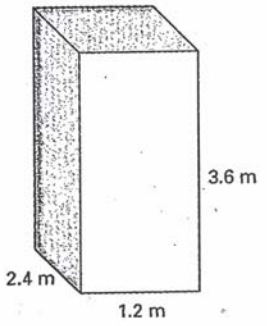
Show your work or explain how you found your answer.

0

I found my answer by finding the surface areas of all of the sides and once I found that I added them all together to find the volume.

2.4m × 1.2m = 2.88 × 2 = 5.76
2.4m × 3.6m = 8.64 × 2 = 17.28
1.2m × 3.6m = 4.32 × 2 = 8.64
31.68

S5I This picture shows a rectangular prism. Based on the given dimensions, what is the **volume** of the rectangular prism?



Volume: 7.2

Show your work or explain how you found your answer.

0

I Added every thing above.

3.6
1.2
+2.4
7.2

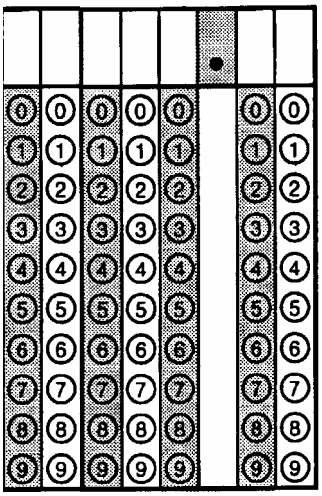
16. Customary and Metric Measures - MC

Which of these is the **best** unit to measure the length of a person's bed?

- ○ Liters
- ◉ Centimeters
- ○ Millimeters
- ○ Kilometers

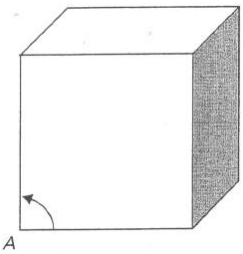
16. Customary and Metric Measures - GR

Karen filled a pitcher with 1800 milliliters of water. How many liters is that?



17. Geometric Shapes and Properties - MC

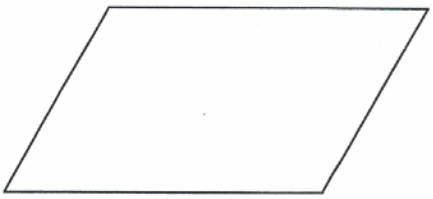
Identify the type of angle indicate below.



- ⦿ Right angle
- ○ Isosceles angle
- ○ Acute angle
- ○ Obtuse angle

17. Geometric Shapes and Properties - OE

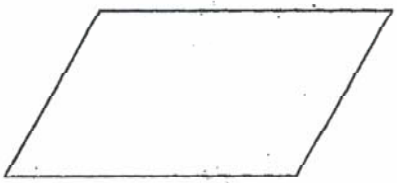
Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.



Parallelogram

S4A Draw and label **1** trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.

trapezoid

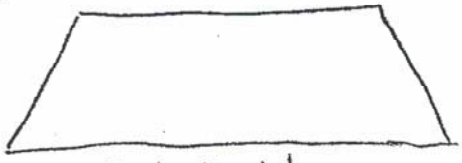


Parallelogram

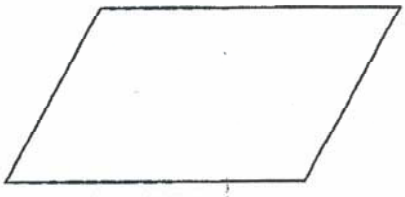
2

They both have at least 1 set of parallel lines.

S4B Draw and label **1** trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.



Trapizoid

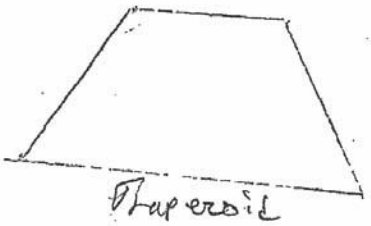


Parallelogram

2

They both have four sides and four angles.

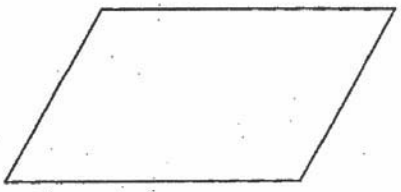
S4C Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.



They don't have right angles

2

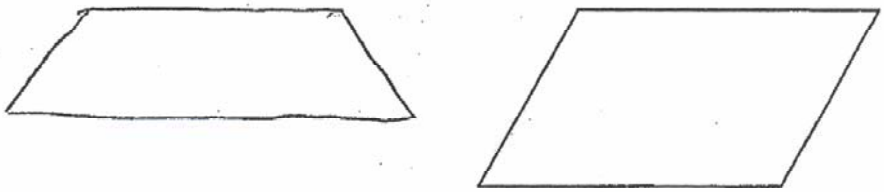
S4D Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.



They both have straight lines.

1

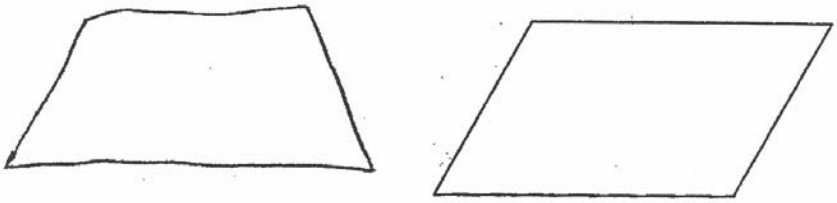
S4E Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.



Parallelogram

They have the same height. 1

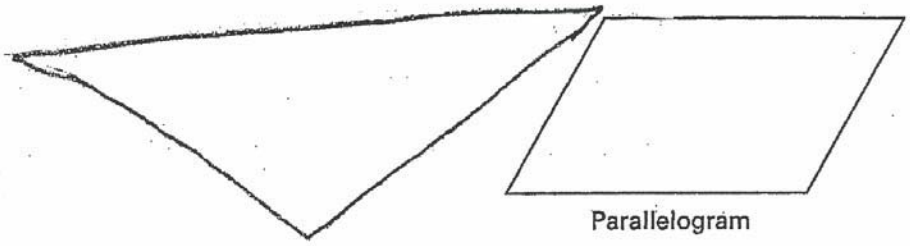
S4F Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.



Parallelogram

1

S4G Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.

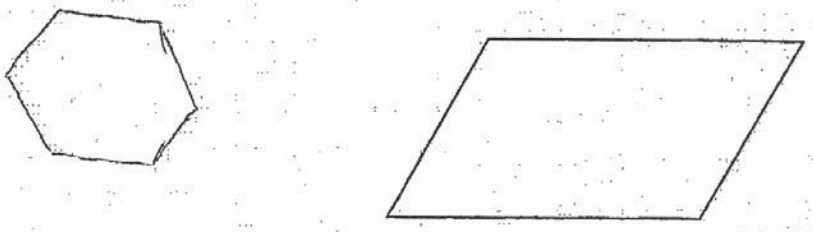


Parallelogram

0

They both have points?
they both have at least 2 straight lines.

S4H Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.

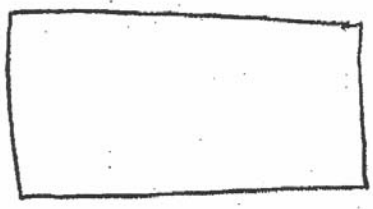


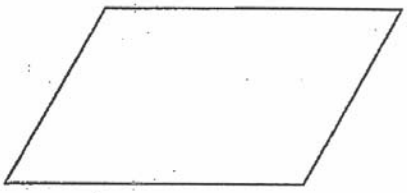
Parallelogram

Some of their sides are equal and stright.

0

S4I Draw and label 1 trapezoid next to the parallelogram. Write one geometric characteristic that both the trapezoid and the parallelogram have in common.





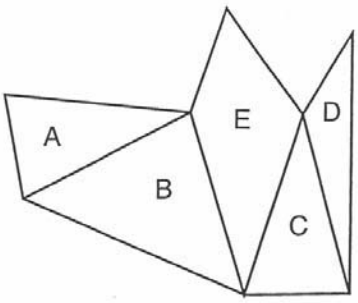
Parallelogram

0

They are both similar in shape.

18. Spatial Relationships - OE

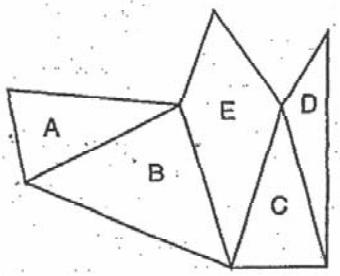
In the figure below, which 2 triangles appear to be **congruent**?



Write the letters of the 2 **congruent** triangles: _____, _____

Explain why you think they are **congruent**.

S2A In the figure below, which 2 triangles appear to be **congruent**?



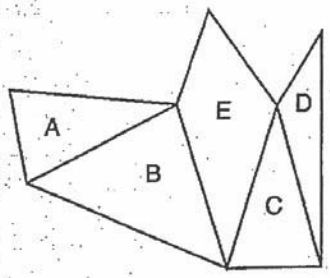
Write the letters of the 2 **congruent** triangles: A, C

2

Explain why you think they are **congruent**.

They are the same the have the same equal sides and the same equal angles.

S2B In the figure below, which 2 triangles appear to be **congruent**?



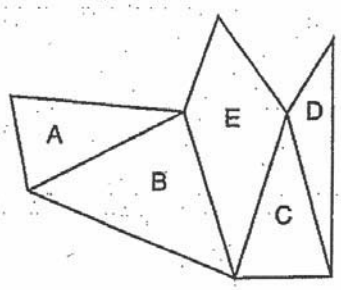
Write the letters of the 2 **congruent** triangles: A, C

2

Explain why you think they are **congruent**.

I think they are congruent because they are the same size and shape.

S2C In the figure below, which 2 triangles appear to be **congruent**?



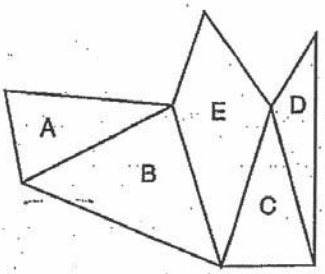
Write the letters of the 2 **congruent** triangles: A, C

2

Explain why you think they are **congruent**.

I think A, C are Congruent because both their Sides are one inch and their bottom are 1½ cm.

S2D In the figure below, which 2 triangles appear to be **congruent**?



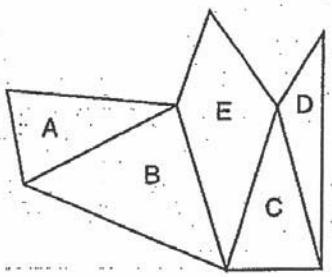
Write the letters of the 2 **congruent** triangles: A, C

1

Explain why you think they are **congruent**.

A and C triangles appear to be most alike. And that is exactly what congruent means.

S2E In the figure below, which 2 triangles appear to be **congruent?**

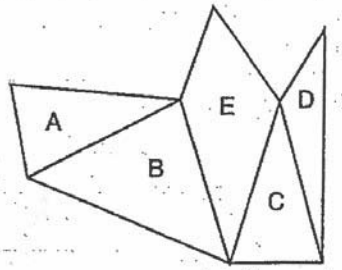


Write the letters of the 2 **congruent** triangles: A, C **1**

Explain why you think they are **congruent.**

I think A and C are congruent because two sides are the same (long) and one side is different (short)

S2F In the figure below, which 2 triangles appear to be **congruent?**

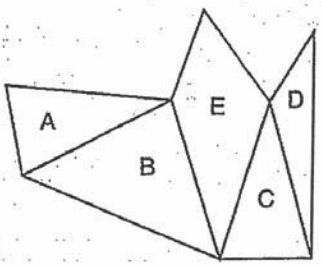


Write the letters of the 2 **congruent** triangles: A, C **1**

Explain why you think they are **congruent.**

I think that they are congruent because they are both triangles

S2G In the figure below, which 2 triangles appear to be **congruent**?



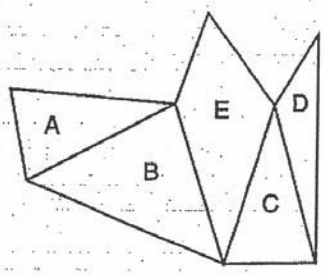
Write the letters of the **2 congruent** triangles: A , B

0

Explain why you think they are **congruent.**

because They A both Triangles and Conecting

S2H In the figure below, which 2 triangles appear to be **congruent**?



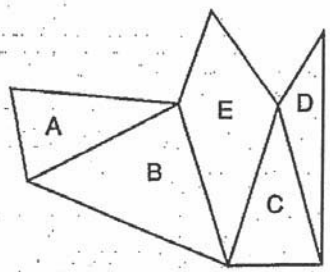
Write the letters of the **2 congruent** triangles: e , D

0

Explain why you think they are **congruent.**

because e look like a diamond shape triangle and look like it is uneven so that is why I pick e and d.

S2I In the figure below, which 2 triangles appear to be **congruent**?



Write the letters of the 2 **congruent** triangles: B , C

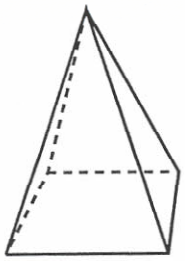
0

Explain why you think they are **congruent.**

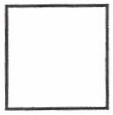
Because, are the 2 (two) most straight ones (1's) on there.

18. Spatial Relationships - MC

Illana has a pyramid shaped like this.



Which of the following shows the view from underneath the pyramid?

◉ 

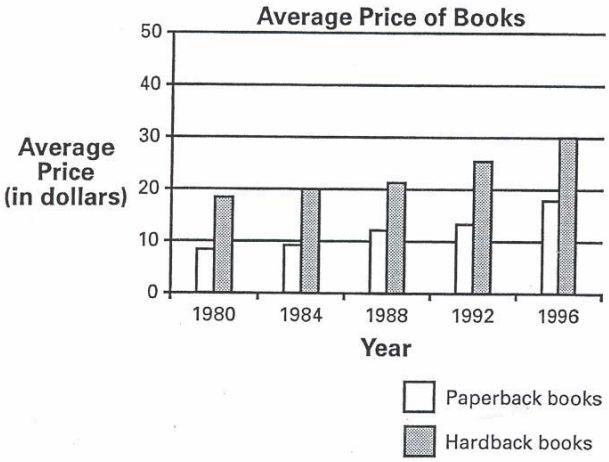
○ 

○ 

○ 

19. Tables, Graphs and Charts - MC

The graph below shows the comparison between the average price of paperback books and the average price of hardback books for 5 different years.



According to the graph, in which year was the average price of a paperback book $18?

- ○ 1980
- ○ 1984
- ○ 1992
- ◉ 1996

19. Tables, Graphs and Charts - OE

S-7 The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

art has been reduced to 80% to fit on page.

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf

S7A The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
~~39~~	43	~~23~~	~~34~~	~~33~~	~~42~~
~~29~~	~~32~~	45	~~34~~	~~37~~	~~38~~

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf
2	3, 9
3	2, 3, 4, 4, 7, 8, 9
4	2, 3, 5

2

S7B The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf
4	235
3	2344789
2	39

2

S7C The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf
1	
2	93
3	2244578
4	52
5	
6	
7	
8	

2

S7D The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf
2	3
3	2 3 4 4 7 8 9
4	2 3 5

1

S7E The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
~~39~~	~~43~~	~~23~~	~~34~~	~~33~~	42
~~29~~	~~32~~	45	~~34~~	~~37~~	~~38~~

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf
2	~~3~~, 9
3	2, 3, 4, 7, 8, 9
4	2, 3, 5

1

S7F The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf
2	3 9
3	2 3 4 4 7 8 9
4	2

1

S7G The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf
47	X
45	X
42	X
39	X
38	X
37	X
34	XX
33	X
32	X
29	X
23	X

0

S7H The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf
39	29
43	32
23	45
34	34
33	37
42	38

0

S7I The table below shows the prices of new bicycle tires.

Bicycle Tire Prices (in dollars)					
39	43	23	34	33	42
29	32	45	34	37	38

Complete the **stem-and-leaf** plot to show the same information.

Bicycle Tire Prices

Stem	Leaf
3	9
4	3
2	3
3	4
3	3
4	2
2	9
3	2
4	5
3	4
3	7
3	8

0

20. Statistics and Data Analysis - MC

This line plot shows the length of each song on Amy's new CD.

How many songs were from 4 to 6 minutes long?

- (•) 3
- ( ) 4
- ( ) 5
- ( ) 6

20. Statistics and Data Analysis - OE

S-5 This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3	3	5	7	8						
7	4	8	8	9	9						
8	1	2	3	3	4	4	7	7	8	9	9
9	1	2	2								

6 | 3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable?_____

Use the data in the plot to explain why or why not.

S5A This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3 3 5 7 8
7	4 8 8 9 9
8	1 2 3 3 4 4 7 7 8 9 9
9	1 2 2

6|3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable? Yes

Use the data in the plot to explain why or why not.

I think Lorens claim was reasonable because for 14 hours of the day, the temperature was over 80°. I would consider 14 hours to be very close to half a day because half a day is 12 hours.

2

S5B This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3 3 5 7 8
7	4 8 8 9 9
8	1 2 3 3 4 4 7 7 8 9 9
9	1 2 2

6|3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable? yes

Use the data in the plot to explain why or why not.

In the plot, it shows that in the 80° range and 90° range, for 14 hours it was over 80°. Half of 24 hours is 12 hours, so it was over 80° for about $\frac{1}{2}$ the day.

2

S5C This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3	3	5	7	8							
7	4	8	8	9	9							
8	1	2	3	3	4	4	7	7	8	9	9	
9	1	2	2									

6|3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable? Yes

Use the data in the plot to explain why or why not.

On the plot, it shows 24 temperatures, half of 24 is 12 and there were 14 listed temperatures above 80° & 14 is about 12, which means it was above 80° for about half the day.

2

S5D This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3	3	5	7	8							
7	4	8	8	9	9							
8	1	2	3	3	4	4	7	7	8	9	9	
9	1	2	2									

6|3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable? NO

Use the data in the plot to explain why or why not.

Loren's claim is incorrect. According to the chart, 10 hours of the day were below 80° and 14 hours of the day were above 80°. Loren's estimate is incorrect because more than half of the hours of the day's temperatures were over 80°

1

S5E This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3	3	5	7	8						
7	4	8	8	9	9						
8	1	2	3	3	4	4	7	7	8	9	9
9	1	2	2								

6 | 3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable? NO

Use the data in the plot to explain why or why not.

no because more then half of the day the temperature was over 80°F.

1

S5F This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3	3	5	7	8						
7	4	8	8	9	9						
8	1	2	3	3	4	4	7	7	8	9	9
9	1	2	2								

6 | 3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable? yes

Use the data in the plot to explain why or why not.

yes because the 80's are right in the middle of the day. And Loren says that about 1/2 of the day the temperture was over 80°.

1

S5G This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3	3	5	7	8						
7	4	8	8	9	9						
8	1	2	3	3	4	4	7	7	8	9	9
9	1	2	2								

6|3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°

Based on the data above, is Loren's claim reasonable? No

Use the data in the plot to explain why or why not.

0

There are only 3 temperatures during the day that were lower then 80°. However there were 21 temperatures that were over 80°.

S5H This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3	3	5	7	8						
7	4	8	8	9	9						
8	1	2	3	3	4	4	7	7	8	9	9
9	1	2	2								

6|3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable? NO

Use the data in the plot to explain why or why not.

0

The hourly temperature can be as low as 60 throughout the day, it all depends

S5I This **stem-and-leaf** plot shows the hourly temperatures during a 24-hour period.

Hourly Temperatures

6	3 3 5 7 8
7	4 8 8 9 9
8	1 2 3 3 4 4 7 7 8 9 9
9	1 2 2

6 | 3 represents 63°

Loren claimed that for **about** $\frac{1}{2}$ of the day the temperature was over 80°.

Based on the data above, is Loren's claim reasonable? NO

Use the data in the plot to explain why or why not.

No because in half of the day, the highest temp. was 79°

0

20. Statistics and Data Analysis - GR

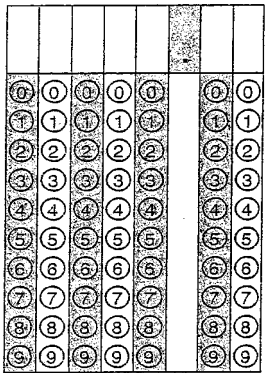
This **stem-and-leaf** plot shows the number of scooters sold for several months

Scooters Sold

0	3 3 5 7
1	4 8 9 9
2	0 0 1 3 4 4 7 7 8 8 8 9
3	2 2 3 4 7 7 8
4	5 6 6

1 | 9 represents 19 scooters

Which number is the **mode** in this plot?



S-2 Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking**, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

red	
blue	
green	

Show your work or explain how you arrived at your prediction.

S2A Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking,** she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

red	4
blue	4
green	2

2

Show your work or explain how you arrived at your prediction.

Since the number of red ones and Blues ones were even and green half that you had to equal ten using that same pattern and the only way to get 10 using that pattern would be to have 4 red 4 blue and 2 green.

S2B Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking,** she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20 40
blue	20 40
green	10 20

r = 40
b = 40
g = 20

How many blocks of each color are probably in the bag?

red	4
blue	4
green	2

r = 4
b = 4
g = 2

2

Show your work or explain how you arrived at your prediction.

I double the amount of blocks she picked and divided by 10 to see what 10 blocks would equal.

S2C Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking**, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

2

red	4
blue	4
green	2

Show your work or explain how you arrived at your prediction.

red 20 ÷ 5 = 4
Blue 20 ÷ 5 = 4
green 10 ÷ 5 = 2
I divided them by five because she picked 50 times out of 10 blocks

S2D Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking**, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

1

red	4
blue	4
green	2

Show your work or explain how you arrived at your prediction.

S2E Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking**, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

1

red	4
blue	4
green	2

Show your work or explain how you arrived at your prediction.

Used common scense

S2F Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking**, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

1

red	4
blue	4
green	2

Show your work or explain how you arrived at your prediction.

I chose that answer because there's ~~go~~ to be in even amount of red and blue and a lower amout of greens

S2G Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking**, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

red	30
blue	30
green	10

0

Show your work or explain how you arrived at your prediction.

I arrived at my prediction by looking at how many times red and blue were picked. They were picked the same amount of times, so I would say they may have the same amount, I know green had the less picked, so there has to be less.

S2H Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking**, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

red	3
blue	3
green	4

0

Show your work or explain how you arrived at your prediction.

I got those by subtracting.

S2I Millie has 10 blocks in a bag. They are either red, blue, or green. **Without looking**, she picked one block out of the bag and then placed it back. She repeated this 50 times. The table shows the results of her experiment.

Blocks Picked

Block	Number of Times Picked
red	20
blue	20
green	10

How many blocks of each color are probably in the bag?

red	20
blue	20
green	10

0

Show your work or explain how you arrived at your prediction.

I arrived at this prediction because if there was 50 and see picked out these #'s, which equal to 50 that should be it.

22. Patterns - MC

These figures rotate in a repeating pattern.

Which figure would be the 13th figure in the pattern?

- ○ 
- ⊙ 
- ○ 
- ○ 

22. Patterns - OE

S-5 These numbers follow a **growing** pattern.

3, 12, 48, ___?___ , 768, . . .

What number is the missing number in the pattern? _____

Explain how you decided which number to write.

_____

_____

_____

S5A These numbers follow a **growing** pattern.

3, 12, 48, ___?___ , 768, . . .

What number is the missing number in the pattern? 192

Explain how you decided which number to write.

Each # is multiplied by 4 (3x4=12x4=48x4=192x4=768 etc.).

2

S5B These numbers follow a **growing** pattern.

3, 12, 48, ___?___ , 768, . . .

What number is the missing number in the pattern? 192

Explain how you decided which number to write.

I decided to write 192 because I realized that to have 12 after 3 and 48 after 12, the pattern must be x4 each to multiply 4 by each number, 3x4=12, 12x4=48. Then I multiplied 48 by 4 and got 192. To check my answer I multiplied 192 by 4 and I got 768.

2

S5C These numbers follow a **growing** pattern.

3, 12, 48, ___?___ , 768, . . .

What number is the missing number in the pattern? 192

Explain how you decided which number to write.

You multiply each number by 4 to get the next number.

2

S5D These numbers follow a **growing** pattern.

3, 12, 48, ___?___ , 768, . . .

What number is the missing number in the pattern? 192

Explain how you decided which number to write.

I got this number by 192. is because 192 doubled is 768.

1

S5E These numbers follow a **growing** pattern.

3, 12, 48, ___?___ , 768, . . .

What number is the missing number in the pattern? 172

Explain how you decided which number to write.

I used 172 because in the pattern you have to multiply by 4. 3x4=12, 12x4=48, 48x4=172, and so on.

1

S5F These numbers follow a **growing** pattern.

3, 12, 48, ? , 768, . . .

What number is the missing number in the pattern? _____

Explain how you decided which number to write.

Each number was multiplied by 4 and
So I multiplied 48 by 4.

1

S5G These numbers follow a **growing** pattern.

3, 12, 48, 162 , 768, . . .

What number is the missing number in the pattern? 160

Explain how you decided which number to write.

3×4=12×4=48×16=768
3 times 4 =12×4=48×16=768

0

S5H These numbers follow a **growing** pattern.

3, 12, 48, ? , 768, . . .

What number is the missing number in the pattern? 720

Explain how you decided which number to write.

You subtract 768 from
48 and theres the missing number

0

3, 12, 48, ___?___, 768, . . .

What number is the missing number in the pattern? 288

Explain how you decided which number to write.

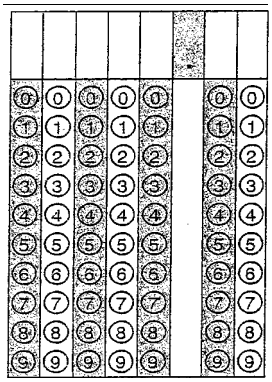
I just guessed I had a 35 but then I just lost myself.

0

23. Algebraic Concepts - GR

What value of x makes this equation true?

$$92 = 2x$$



23. Algebraic Concepts - MC

$54 - 36 \div 9 =$

- ⊙ 50
- ○ 18
- ○ 4
- ○ 2

23. Algebraic Concepts - OE

S-6 Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p, that shows the number of people who attended Saturday night's concert.

S6A Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p, that shows the number of people who attended Saturday night's concert.

3.7p

1

S6B Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p, that shows the number of people who attended Saturday night's concert.

p 3.7

1

S6C Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p, that shows the number of people who attended Saturday night's concert.

Px 3.7 =

1

S6D Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p, that shows the number of people who attended Saturday night's concert.

At Saturday nigths concert there were more people there than P.

0

S6E Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p, that shows the number of people who attended Saturday night's concert.

p÷ 3.7=SNC

0

S6F Reggie found out that 3.7 times as many people attended Saturday night's concert as those who attended Friday night's concert.

Let p represent the number of people who attended Friday night's concert.

Write an expression, using p, that shows the number of people who attended Saturday night's concert.

p x 3.7 = P

0

24. Classification and Logical Reasoning - MC

Samantha, Joe, and Carl were the only three runners in a race.They each finished the race at different times. In how many different ways can first and second place ribbons be awarded to these three runners?

- ○ 2
- ○ 4
- ◉ 6
- ○ 12

25. Mathematical Applications

E-1 Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about** $200, what is a **reasonable** estimate for the number of laps Emma will need to run?_____

Show your work or explain how you arrived at your estimated answer.

E1A Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about** $200, what is a **reasonable** estimate for the number of laps Emma will need to run? 27 laps

Show your work or explain how you arrived at your estimated answer.

3

$0.75 is in between $0.50 & $1.00. if 10 people give $0.75 for each lap, Emma will get $7.50 per lap. Divide $200 by $7.50 to figure out how many laps she needs to run. $200. ÷ $7.50 = 26.67, or rounded up to 27 laps.

E1B Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about** $200, what is a **reasonable** estimate for the number of laps Emma will need to run? 27 laps

Show your work or explain how you arrived at your estimated answer.

3

$.75 · 10 people = $7.50 per lap n = about the number of laps

$7.50 · n = 200

7.50 7.50

n = about 27 laps

E1C Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about** $200, what is a **reasonable** estimate for the number of laps Emma will need to run? 30 laps

Show your work or explain how you arrived at your estimated answer.

5|200 40 $200.00

I got the # of laps if everyone payed .50¢ and got the number of laps if everyone payed a $1.00 then I took the the average of the 2 numbers and that was my final answer

3

E1D Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about** $200, what is a **reasonable** estimate for the number of laps Emma will need to run? about 23

Show your work or explain how you arrived at your estimated answer.

$1.00 × 10 = 10.00

$200.00 ÷ 10.00 = 22.60 → (23 about)

2

E1E Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about $200**, what is a **reasonable** estimate for the number of laps Emma will need to run? 267

2

Show your work or explain how you arrived at your estimated answer.

0.50 0.75 1.00

200 ÷ 0.75 = 266.7

I thought of a number between 267 × 0.75 = 200.25
$0.50 and $1.00 and I came up with
$0.75. Then I divided 200 by 0.75 and got 266.7.
The I multiplied 267×0.75 and got $200.25. So
Emma will need to run about 267 laps to
raise 200 dollars

E1F Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about $200**, what is a **reasonable** estimate for the number of laps Emma will need to run? 20

2

Show your work or explain how you arrived at your estimated answer.

I figured she will get about $10 from
all the people for each lap she runs, so
20 laps would give her about 200.

E1G

Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about $200**, what is a **reasonable** estimate for the number of laps Emma will need to run? 25 **1**

Show your work or explain how you arrived at your estimated answer.

It is $1.00 per lap so if Emma runs 25 laps that's $25 right there so the 10 other people will run 25 laps and Emma can raise up to about $200.

E1H

Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about $200**, what is a **reasonable** estimate for the number of laps Emma will need to run? 30 **1**

Show your work or explain how you arrived at your estimated answer.

I took a money ammount in the middle which is .75¢ then I multiplied it by 200

E1I Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about** $200, what is a **reasonable** estimate for the number of laps Emma will need to run? 20

Show your work or explain how you arrived at your estimated answer.

1

E1J Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from 10 people.
- Each of the 10 people pledged between $0.50 to $1.00 for each lap.
- For each lap she runs, she receives the amount of money pledged by all 10 people.
- She hopes to raise a total of about $200.

If Emma wants to raise a total of **about** $200, what is a **reasonable** estimate for the number of laps Emma will need to run?_____

Show your work or explain how you arrived at your estimated answer.

I got 150 laps because .50 and 1.00 in between is .75 and and ~~[illegible]~~ 100 and 200 inbetween is 150.

0

E1K Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from **10** people.
- Each of the **10** people pledged between **$0.50** to **$1.00** for each lap.
- For each lap she runs, she receives the amount of money pledged by all **10** people.
- She hopes to raise a total of about **$200.**

If Emma wants to raise a total of **about $200**, what is a **reasonable** estimate for the number of laps Emma will need to run? 10

Show your work or explain how you arrived at your estimated answer.

She will need to do 10 laps to get to 200 because the 10 people give her $1.00 for trip.

0

E1L Emma has volunteered to help raise money for the local library by running laps in a jog-a-thon. She plans to gather pledges from her friends and neighbors for the event, which will take place at the high school track. Here is what Emma knows:

- She gathered pledges from **10** people.
- Each of the **10** people pledged between **$0.50** to **$1.00** for each lap.
- For each lap she runs, she receives the amount of money pledged by all **10** people.
- She hopes to raise a total of about **$200.**

If Emma wants to raise a total of **about $200**, what is a **reasonable** estimate for the number of laps Emma will need to run? 200

Show your work or explain how you arrived at your estimated answer.

$1.00 About 200 laps.
x200
000
0000
200.00

0

Connecticut Mastery Test – Fourth Generation
Mathematics Grade 7 Vocabulary List

About
Accurate
Acute angle
Add
All together
A.M.
Angle (s)
Answer
Approximate
Arc
Area
Array
Arranged
Arrived at (as in determined)
Arrow
At least
Average
Axis
Bar graph
Between
Categories
Capacity
Celsius degree
Centimeter
Chance
Change (as in money)
Chart
Chord
Circle
Circle graph
Classify
Clock (analog and digital)
Closest to
Column (s)
Combine
Combination
Common attribute
Compare
Conclusion
Cone
Congruent
Coordinates
Coordinate grid
Cube
Cup
Cylinder
Data
Day
Days of the week
Decimal
Degree (s)
Denominator
Depth
Describe
Design
Determined
Diagram
Diameter
Different
Digit
Divide
Double Bar Graph
Double Line Graph
Dozen
Elapsed time
Equal
Equation
Equilateral
Equilateral triangle
Equivalent
Estimate
Exactly
Explain
Exponents (positive & negative)
Expression
Evaluate
Event
Factor
Fahrenheit degrees
Fair
Farthest
Fewer, fewest
Fewer than
Figure (as in geometric figure)
Foot
Formulas
Fraction
Fractional part
Gallon
Geometric solid
Grams
Graph
Greatest
Grid (dot paper and coordinate)
Group
Grouped
Growing patterns
Half
Half-Inch
Height (s)
Hexagon
Highest
Hour
How many more/less
Hundred (s)
Hundredth
Improper fraction
Inch
In common
Input
Integers
Intersect
Intersection
Interval
Isosceles triangle
Kilogram
Kilometer
Larger/larger than
Least
Least likely
Length
Less
Less than
Likely
Line graph
Line of symmetry
Line plot
Line segment
Liter
Locate (d)
Long, longer, longest
Lowest
Mass
Mathematical thinking
Maximum
Mean
Measure
Measurement
Median
Meter
Mile
Milligram
Milliliter
Millimeter
Minimum
Minute
Missing
Mixed number
Mode
Month
More than
Most
Most likely
Multiple
Multiply
Nearest
No less than
No more than
Number fact
Number line
Number sentence
Numerator
Obtuse angle
Octagon
Odd number
One-dimensional
Ones
Open sentence
Operation
Order of Operations
Order (numbers)
Ordinal words (first, second, etc.
Ordered pairs
Ounce
Outlier
Output
Parallel
Parallelogram
Pattern
Pentagon
Percent
Perimeter

This list while not exhaustive, includes vocabulary with which all teachers and students should be familiar. **Bold** words may be new vocabulary that should be used at this grade level.

Mathematics Grade 7 Vocabulary List (Continued)

Perpendicular
Pictograph
Pint
P.M.
Point (on a graph)
Point (on a number line)
Polygon
Possible
Pound
Predict
Probability
Product
Proportion
Pyramid
Quadrilateral
Quart
Quarter
Quotient
Radius
Range
Ratio
Reasonable
Rectangle
Rectangular prism
Reflection
Regular polygon
Rename
Repeating patterns
Replaced
Represents
Rhombus
Right angle
Right triangle
Ring (draw a ring around)
Rotation (including clockwise and counterclockwise
Rounded, rounding
Row (s)
Same/ the same as
Scale
Scalene triangle
Scientific notation
Schedule
Second
Segment
Set
Shaded
Shape
Short, shorter, shortest
Side (s)
Size
Similar
Smaller/smaller than
Solve/Solution
Sort
Sphere
Spinner
Square
Square centimeter
Square foot
Square inch
Square meter
Square unit
Square yard
Stem-and-Leaf plot
Story problem
Subtract
Sum
Symbol
Symmetry
Table
Tall, taller, tallest
Temperature
Tens
Tenth (s)
Term (in a pattern)
Thousands
Three-dimensional
Ton
Transformation
Translation
Trapezoid
Trend
Triangle
Two-dimensional
Unit (using dot paper, base 10 blocks, and measurement)
Unreasonable
Unshaded
Value
Venn diagram
Vertical axis
Volume
Week
Weight
Width
X-axis
Y-axis
Yard
Year

This list while not exhaustive, includes vocabulary with which all teachers and students should be familiar. **Bold** words may be new vocabulary that should be used at this grade level.