High School

A canoe can be paddled 10 miles upstream, against the river current, in 5 hours. Paddling downstream the same distance takes 1 hour. Write and graph a system of equations to solve for the speed c of the canoe in still water and speed r of the river current. Expression the solution to the system as an ordered pair *(c, r)*

Source: http://www.glencoe.com/sec/math/algebra/algebra1/algebra1_05/study_guide/pdfs/alg1_pssg_G053.pdf
Standard: HSA.REI.6

Emma goes to the market and purchases some chocolates. One day, she purchased 7 packets of dark chocolates and 10 packets of vanilla chocolates. Each type of chocolate came in different sizes. The total number of chocolates she received was 123. On the second day, she buys 2 packets of dark chocolates and 10 packets of vanilla chocolates for a total of 78 chocolates. The packets of dark chocolate contain _____ chocolates and the packets of vanilla chocolate contain _____ chocolates.

Standard: HSA-REI.C.5
Source: http://www.mathworksheetsland.com/algebra/31solvsyswords/ip.pdf

Write an equation or inequality to solve each scenario.

500 students went on picnic trip. 10 students travelled in each car. Find out how many cars were used for the picnic trip?

John bought ten books all at the same price. The total cost of the books was $242. He gave two books to his friend. What was the value of the books that he gave to his friend?

Jolly had some burgers. He ate two burgers and then he divided the remaining burgers amongst his friends. He has five friends. Every friend received two burgers. How many burgers did Jolly start with?

Standard: HSA-CED.A.1
Source: http://www.mathworksheetsland.com/algebra/17createeqineq/ip.pdf

High School

You are planning a homemade pizza party and want to make your own pizza box out of cardboard. You look online for example pizza boxes and you find this from a web site:

- The pizza box should have a square base.
- The volume of the pizza box should be 512 cubic inches.
- To construct a box, you should cut out the square corners so that you can fold up the edges.
- The box should be 2 inches deep.

Part A
Create a flattened cardboard diagram with dotted lines drawn for where the cardboard should be folded. Label the depth of the pizza box.

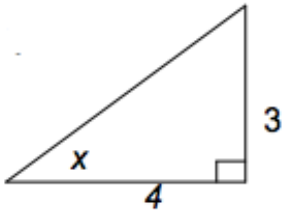
If you fold the net into the pizza box, identify what three-dimensional shape you created.

Part B
What should be the dimensions of the square cardboard?

What is the maximum area of the pizza that can fit in this box?

Standard: HSG.MG.A.1
Source: LZ unpublished

Find the sine, cosine, and tangent of x.



Standard: G.SRT.6
Source: http://www.schools.utah.gov/CURR/mathsec/Core/Secondary-II/Unit-5---Define-Trigonometric-Ratios-and-Solve-Pro.aspx

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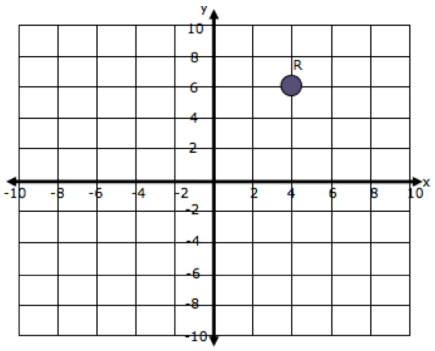
Graph the image of R (4, 6) after the following transformations:

Translation (x, y) (x+4, y-4)

Standard: HSG-CO.A.3
Source: http://www.mathworksheetsland.com/geometry/3complextrans/ip.pdf



High School

An acidophilus culture containing 150 bacteria doubles in population every hour. Predict the number of bacteria after 12 hours.

a. Write a function representing the bacteria population for every hour that passes.

b. Graph the function.

c. Use the graph to predict the number of bacteria after 12 hours.

Standard:HSF.LE.A.2
Source: http://my.hrw.com/math06_07/student/pdf/english/alg2/alg2_07_0493.pdf

Multiply $(x - 1)(x^3 + 4x^2 + 4x - 1)$ and combine like terms. Explain how you reached your answer.

Standard: A-SSE.A.2 and A-APR.C.4
Source: https://www.engageny.org/resource/algebra-ii-module-1

The height of a high jumper in the air t seconds after he takes off can be modeled by the function $y = -16t^2 + 48t + 4$, where t and y are measured in feet. What is the maximum height that the high jumper reaches? Use completing the square to solve this problem.

Standard: HSA.SSE.3.B
Source: https://braingenie.ck12.org/skills/106842