**Activity 3.1.5 Applications of the Triangle, Quadrilateral and
Polygon Angle Sum Theorems**

**Part I -- Triangles**

Determine the missing degree measure for each diagram. m $∠B$



1. m $∠B$ = \_\_\_\_\_\_\_



1. m $∠B$ = \_\_\_\_\_\_\_



1. m $∠C$ = \_\_\_\_\_\_\_



1. m $∠A$ = \_\_\_\_\_\_\_



1. m $∠J$ = \_\_\_\_\_\_\_



1. m $∠I$ = \_\_\_\_\_\_\_

Use the diagram at the right for questions 7 and 8.

1. m $∠GEH$  = \_\_\_\_\_\_\_
2. m $∠DGF$ = \_\_\_\_\_\_\_
3. Use the diagram below to determine the measures of the angles.



m $∠1 $= \_\_\_\_\_\_\_

m $∠2$ = \_\_\_\_\_\_\_

m $∠3$ = \_\_\_\_\_\_\_

m $∠4$ = \_\_\_\_\_\_\_

m $∠5$ = \_\_\_\_\_\_\_

m $∠6$ = \_\_\_\_\_\_\_

m $∠7$ = \_\_\_\_\_\_\_

m $∠8$ = \_\_\_\_\_\_\_

m $∠9$ = \_\_\_\_\_\_\_

**Part II -- Quadrilaterals and Other Polygons**

1. Determine the measure of $∠A$.

m $∠A$ = \_\_\_\_\_\_\_

1. Determine the value of *x*. Then determine the measures of all of the angles in the figure.



*x* = \_\_\_\_\_\_\_

m $∠E$ = \_\_\_\_\_\_\_

m $∠F$ = \_\_\_\_\_\_\_

m $∠G$ = \_\_\_\_\_\_\_

m $∠H$ = \_\_\_\_\_\_\_

1. Determine the measure of $∠E$.

m $∠E$ = \_\_\_\_\_\_\_

1. Determine the value of *x.* Then determine the measures of all of the angles in the figure.

*x* = \_\_\_\_\_\_\_



m $∠F$ = \_\_\_\_\_\_\_

m $∠G$ = \_\_\_\_\_\_\_

m $∠H$ = \_\_\_\_\_\_\_

m $∠I$ = \_\_\_\_\_\_\_

m $∠J$ = \_\_\_\_\_\_\_