Name ____

Section _____
Due: Monday, January 14, 2013

Chapter 7 Homework Packet #1

(worth 20 points)

§7.1 Using Proportions

Find each ratio and express it as a fraction in simplest form.

1) By 2000, for every 2 new U.S. male workers, there were 3 new U.S. female workers. Find the ratio of male workers to female workers.

2) A designated hitter made 8 hits in 10 games. Find the ratio of hits to games.

3) There are 76 boys and 89 girls in the sophomore class. Find the ratio of boys to girls.

Solve each proportion by using cross products.

4) $\frac{a}{5.18} = \frac{1}{4}$

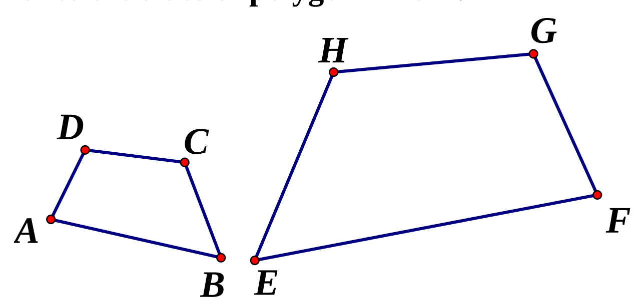
5) $\frac{5}{n+3} = \frac{7}{4}$

6) $\frac{a+1}{a-1} = \frac{5}{6}$

7) $\frac{2}{3x+1} = \frac{1}{x}$

Corresponding sides of polygon *ABCD* are proportional to the sides of polygon *EFGH*.

8) If $AB = 14$, $BC = 2.6$, and $EF = 21$, find FG.



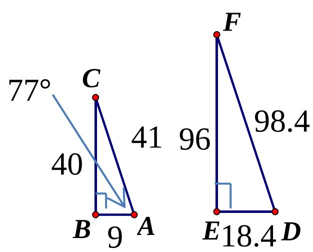
9) If $AD = \frac{2}{3}$, $BC = \frac{3}{4}$, and $FG = \frac{1}{2}$, find EH.

10) **In a triangle, the ratio of the measures of three angles is 2:5:8. Find the measure of each angle in the triangle.**

11) **The ratio of two angles in an isosceles right triangle is 1:2. Explain why this is true.**

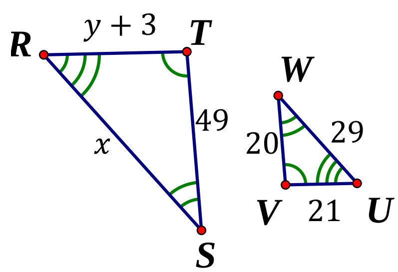
§7.2 Exploring Similar Polygons

12) **Determine whether the figures are similar. Justify your answer.**

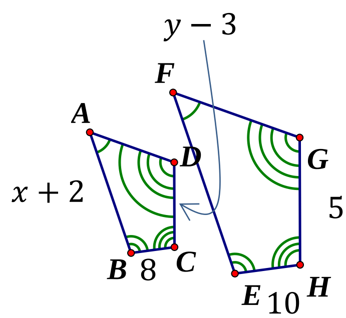


Each pair of polygons is similar. Find the values of *x* and *y*.

13)



14)



For each statement, write *A* if the statement is *always* true, *S* if the statement is *sometimes* true, and *N* if the statement is *never* true. Draw figures to support your answer.

15) Two rectangles are similar. _____

16) Two squares are similar. _____

17) A triangle is similar to a quadrilateral. _____

18) Two isosceles triangles are similar. _____

19) Two rhombi are similar. _____

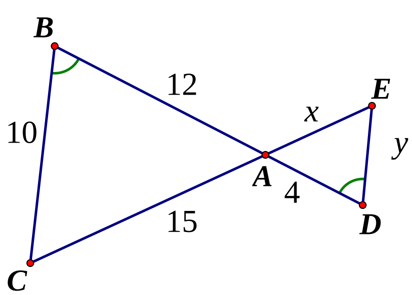
20) Two equilateral triangles are similar. _____

21) **Plot the given points then draw *ABCD* and $\overline{MN}$. Find the coordinates for vertices *L* and *O* such that *ABCD* is similar to *NLOM*.**
$A(2,0), B(4,4), C(0,4), D(-2,0); M(4,0), N(12,0)$

§7-3 Identifying Similar Triangles

Identify the similar triangles in each figure. Explain why they are similar and use the given information to find *x* and *y*.

22)



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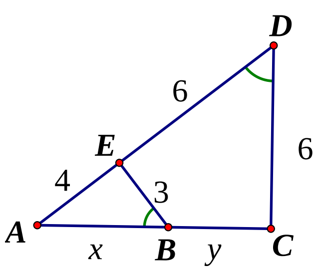
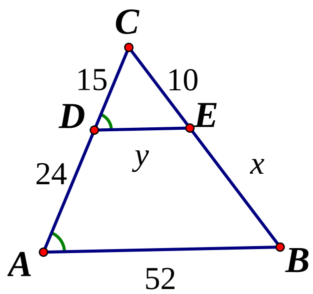
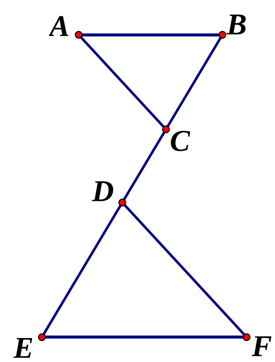


24) 

Write a 2-column or a flow proof for each proof below.

25) Given: $\overline{AB} \parallel \overline{EF}, \overline{AC} \parallel \overline{DF}$
Prove: $\Delta ABC \sim \Delta FED$



26) Given: $\overline{AB} \perp \overline{BD}, \overline{ED} \perp \overline{BD}$
Prove: $\Delta BDA \sim \Delta CDE$