Name _____ Date _____ Class _____

Skills Readiness
Find Missing Measures in Similar Figures

Corresponding sides of similar polygons are proportional. Corresponding angles of similar polygons are congruent.

Notation: $\triangle ABC \sim \triangle DEF$ Remember: order matters!

Similarity proportion statements: $\dfrac{AB}{BC} = \dfrac{DE}{EF}$; $\dfrac{AC}{BC} = \dfrac{DF}{EF}$; $\dfrac{AB}{AC} = \dfrac{DE}{DF}$; etc.

Example: $\square HJKL \sim \square PQRS$. $HJ = 6$, $HL = 2$, and $PS = 7$. What is PQ?

• Step 1: Write a proportion using letters; use the sides given and the missing side:

$$\dfrac{HJ}{HL} = \dfrac{PQ}{PS}$$

• Step 2: Replace the given sides with the appropriate values: $\dfrac{6}{2} = \dfrac{PQ}{7}$.

• Step 3: Solve the proportion using cross-multiplication:

$$6(7) = 2(PQ); \quad PQ = \dfrac{6(7)}{2} = \dfrac{42}{2} = 21$$

Practice on Your Own

1. $\triangle RST \sim \triangle XYZ$. Complete the congruence statement: $m\angle TSR \cong m\angle \boxed{}$

2. $\triangle ABC \sim \triangle STU$. $m\angle BCA = 62°$. What other angle has a measure of 62°? _____

3. $\square AGPS \sim \square DHNZ$. $m\angle GPS = 65°$ and $m\angle PSA = 115°$.

   What is the measure of $\angle NZD$? _____

4. $\square DEFG \sim \square LMNO$. If you know the values of DE, DF, and LN, for which other side is it

   possible to find the length? _____

5. $\pentagon ABCDE \sim \pentagon LMNOP$. Complete the proportion: $\dfrac{BE}{AC} = \dfrac{\boxed{}}{LN}$

6. $\triangle HPV \sim \triangle UBK$. $UB = 18$, $HP = 2$, and $BK = 90$. What is PV? _____

7. $\square WXYZ \sim \square PQRS$. $XY = 5$, $YZ = 12$, and $QR = 30$. What is RS? _____

Check

8. $\triangle FGH \sim \triangle LMN$. $m\angle HFG = 84°$. What other angle has a measure of 84°? _____

9. $\square ABCD \sim \square PQRS$. $m\angle ABC = 80°$ and $m\angle DAB = 100°$.

   What is the measure of $\angle PQR$? _____

10. $\square JKLM \sim \square DEFG$. If you know the values of DF, DG, and JL, for which other

    side is it possible to find the length? _____

11. $\triangle CDE \sim \triangle HJK$. $DE = 24$, $JK = 3$, and $CE = 64$. What is HK? _____

12. $\triangle UVWX \sim \triangle CDEF$. $WX = 9$, $VW = 11$, and $EF = 36$. What is DE? _____

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