Name: Answers Hour: ____

H. Geometry **Chapter 7 Review**

Questions 1 – 3 are multiple choice. Circle the correct answer for each.

1. If $\frac{a}{12}=\frac{b}{6}$, complete the following statement: $\frac{b}{a}=\frac{?}{?}$

[A] $\frac{12}{6}$ [B] $\frac{6}{12}$ [C] $\frac{a}{12}$ [D] $\frac{6}{b}$

2. If $\frac{a}{12}=\frac{b}{6}$, complete the following statement: $\frac{6}{12}=\frac{?}{?}$

[A] $\frac{a}{6}$ [B] $\frac{b}{12}$ [C] $\frac{a}{b}$ [D] $\frac{b}{a}$

3. If $\frac{x}{y}=\frac{5}{8}$, which one of the following statements will *not* be true.

[A] $8x=5y$ [B] $\frac{x}{8}=\frac{5}{y}$ [C] $\frac{x+y}{y}=\frac{5+8}{8}$ [D] $\frac{x}{5}=\frac{y}{8}$

Fill in the right-hand side of the second proportion.

4. If $\frac{y}{x}=\frac{3}{5}$, then $\frac{5}{x}=\frac{3}{y}$

5. If $\frac{a}{b}=\frac{5}{9}$, then $\frac{a+b}{b}=\frac{5+9}{9}$

6. The door in a room is 8 ft. tall. An architect's model of the same door is 2 in. high. What is the ratio of the height of the model to the real height?

$2\text{in}:8\text{ft}=\frac{2\text{in}}{8\text{ft}}=\frac{2\text{in}}{96\text{in}}=\frac{1}{48}$

Solve each proportion.

7. $\frac{4}{8}=\frac{m}{22}$ $8m=88$ $m=11$

8. $\frac{x}{7.5}=\frac{12}{2.5}$ $2.5x=90$ $x=36$

9. $\frac{y}{y+2}=\frac{3}{4}$ $4y=3(y+2)$ $y=6$ $4y=3y+6$

10. $\frac{x-1}{3}=\frac{15}{9}$ $9(x-1)=45$ $9x-9=45$ $9x=54$ $x=6$

Use the similarity statement to complete the statements below: $\Delta ABC \sim \Delta LMO$.

11. $m\angle C = m\angle$ O

12. $\frac{AC}{LO} = \frac{BC}{MO}$

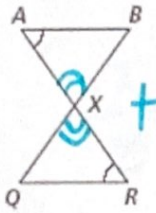
13. The scale on a map is 1 in. = 120 mi. If two cities are $6\frac{1}{2}$ in. apart on the map, what is the actual distance in miles?

drawing / actual

$\frac{1}{120} = \frac{6.5}{x}$ $x = 780$ miles

Explain why the triangles below are similar: AA~, SAS~, or SSS~. Show any work necessary to explain your reasoning below the triangles. Then write a similarity statement. If they are not similar, then put "no" and leave the next two lines blank.

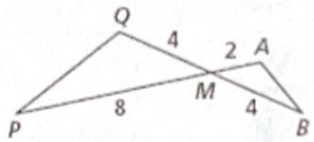
14.



two ≅ angles

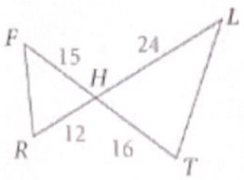
Similar? yes
Reason: AA~
Similarity statement: $\Delta ABX \sim \Delta RQX$

15.



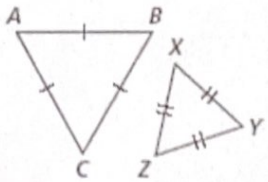
Similar? yes
Reason: SAS~
Similarity statement: $\Delta PQM \sim \Delta BAM$

16.



Similar? NO
Reason: _____
Similarity statement: _____

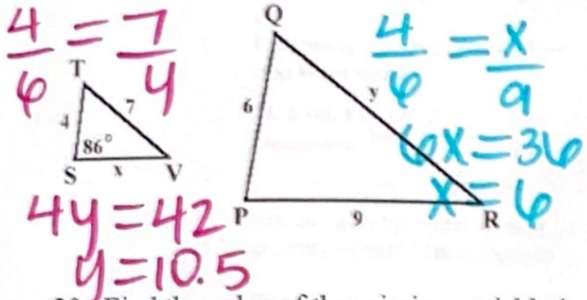
17.



Similar? Yes
Reason: SSS~
Similarity statement: $\Delta ABC \sim \Delta XYZ$

The triangles below are similar. Find the value of the variables.

18. $x =$ 6
$y =$ 10.5



$\frac{4}{6} = \frac{7}{4}$

$4y = 42$

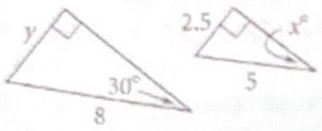
$y = 10.5$

$\frac{4}{6} = \frac{x}{9}$

$6x = 36$

$x = 6$

19. $x =$ 30°
$y =$ 4



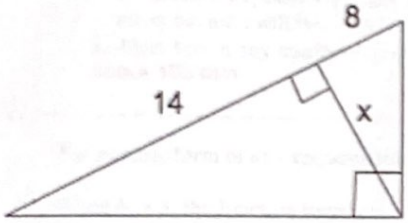
$\frac{y}{2.5} = \frac{8}{5}$

$5y = 20$

$y = 4$

20. Find the value of the missing variable in each figure.

a.

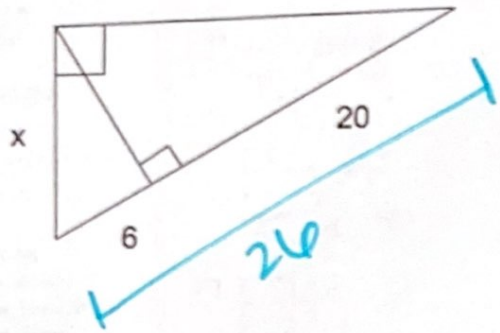


$\frac{x}{8} = \frac{14}{x}$

$x^2 = 112$

$x = 10.58$

b.



$\frac{6}{x} = \frac{x}{26}$

$x^2 = 156$

$x = 12.49$