Name _____ Class _____ Date _____

Reteaching 7-5

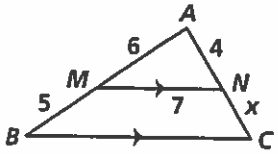
Proportions in Triangles

OBJECTIVE: Investigating proportional relationships in triangles

MATERIALS: Calculator

Example

Find the value of each variable.

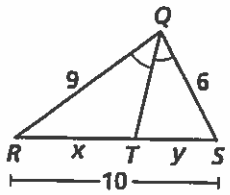


$\frac{AM}{MB} = \frac{AN}{NC}$ by the Side-Splitter Theorem

$\frac{6}{5} = \frac{4}{x}$ by substitution

$6x = 20$ by cross-multiplication

$x = \frac{10}{3}$



$\frac{QR}{QS} = \frac{RT}{ST}$ by the Triangle-Angle-Bisector Theorem

$\frac{9}{6} = \frac{x}{y}$ by substitution

$\frac{9}{6} = \frac{x}{10 - x}$ because $x + y = 10$

$9(10 - x) = 6x$ by cross-multiplication

$90 - 9x = 6x$

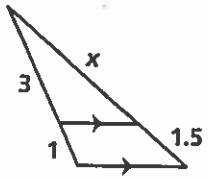
$90 = 15x$

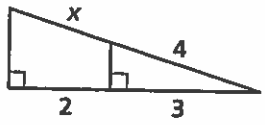
$6 = x$

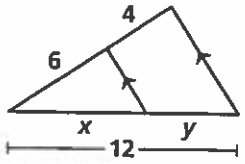
$4 = y$

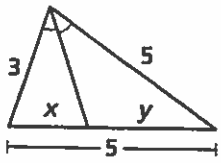
Exercises

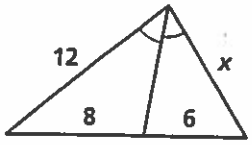
Find the value of each variable.

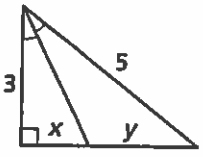
1. 

2. 

3. 

4. 

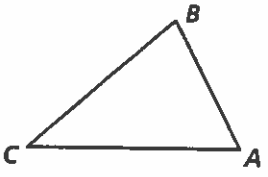
5. 

6. 

In $\triangle ABC$, $AB = 6$, $BC = 8$, and $AC = 9$.

7. The bisector of $\angle A$ meets $\overline{BC}$ at point N. Find BN and CN.

8. $\overline{XY} \parallel \overline{CA}$. Point X lies on $\overline{BC}$ such that $BX = 2$, and Y is on $\overline{BA}$. Find BY.

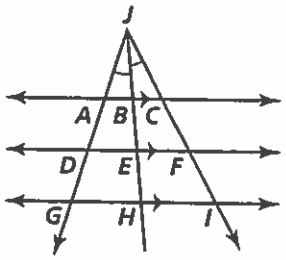


Name _____ Class _____ Date _____

Practice 7-5

Proportions in Triangles

Use the figure at the right to complete each proportion.



1. $\frac{AD}{DG} = \frac{?}{EH}$

2. $\frac{CF}{BE} = \frac{FI}{?}$

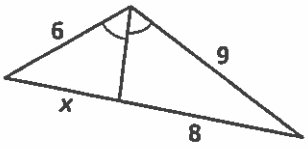
3. $\frac{JA}{JC} = \frac{AB}{?}$

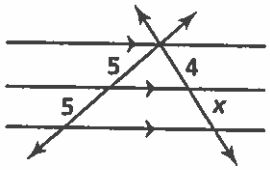
4. $\frac{JF}{FE} = \frac{?}{DE}$

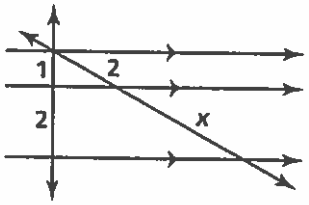
5. $\frac{GH}{HI} = \frac{?}{?}$

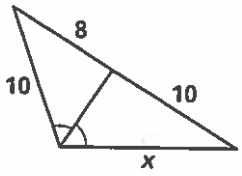
6. $\frac{AD}{AG} = \frac{?}{BH}$

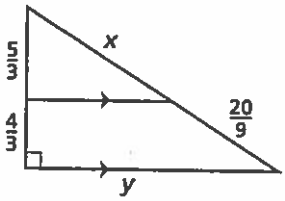
Algebra **Find the values of the variables.**

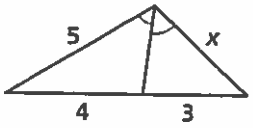
7. 

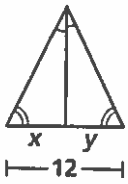
8. 

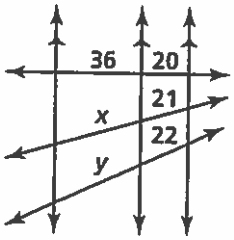
9. 

10. 

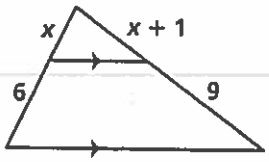
11. 

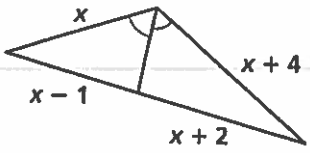
12. 

13. 

14. 

Algebra **Solve for *x*.**

15. 

16. 

17.