

# Practice 8.4

## Proportions in Triangles

Use the figure at the right to complete each proportion.

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

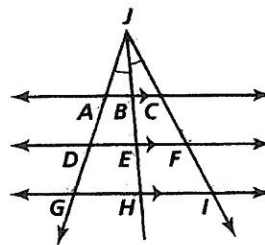
2.  $\frac{CF}{BE} = \frac{FI}{?}$  EH

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

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

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

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



Algebra Find the values of the variables.

7. 
$$\frac{6}{x} = \frac{9}{8} \Rightarrow 48 = 9x$$

$$x = 48/9$$

8. 
$$x = 4$$

9. 
$$x = 4$$

10. 
$$\frac{8}{10} = \frac{10}{x}$$

$$100 = 8x$$

$$x = 100/8 = 12.5$$

11. 
$$\frac{5}{20/9} = \frac{4}{y}$$

$$\frac{45}{4} = \frac{4}{y} \Rightarrow 45y = 16$$

$$y = 16/45$$

12. 
$$\frac{5}{4} = \frac{x}{3}$$

$$4x = 15$$

$$x = 15/4$$

13. 
$$x + y = 13$$

$$\frac{5}{x} = \frac{7}{y}$$

$$5y = 7x$$

$$7x - 5y = 0$$

$$5x + 5y = 65$$

$$12x = 65$$

$$x = 65/12$$

$$y = 91/12$$

14. 
$$x = y$$

$$x + y = 12$$

$$x = y = 6$$

15. 
$$\frac{36}{x} = \frac{20}{22}$$

$$36 \cdot 22 = 20x$$

$$792 = 20x$$

$$x = 39.6$$

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Algebra Solve for x.

16. 
$$\frac{2}{6} = \frac{x+1}{9}$$

$$9 \cdot 2 = 6(x+1)$$

$$18 = 6x + 6$$

$$12 = 6x$$

$$x = 2$$

17. 
$$\frac{x-1}{x+2} = \frac{x}{x+4}$$

$$(x-1)(x+4) = x(x+2)$$

$$x^2 + 3x - 4 = x^2 + 2x$$

$$x - 4 = 0$$

$$x = 4$$

18. 
$$\frac{x}{x+5} = \frac{2x-8}{x+8}$$

$$x(x+8) = (2x-8)(x+5)$$

$$x^2 + 8x = 2x^2 - 40 + 10x - 40$$

$$x^2 - 6x - 40 = 0$$

$$(x-10)(x+4) = 0$$

$$x = 10, -4$$