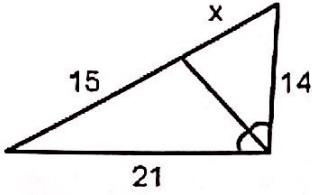


Day 5 – Triangle Angle Bisector Theorem – Practice

Directions: Solve for the stated variable.

1.

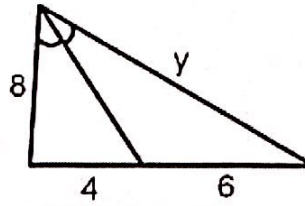


$$\frac{x}{14} = \frac{15}{21}$$

$$21x = 210$$

$$\boxed{x = 10}$$

2.

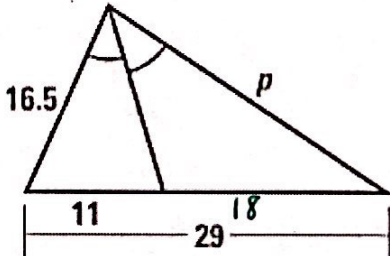


$$\frac{8}{4} = \frac{y}{6}$$

$$4y = 48$$

$$\boxed{y = 12}$$

3.

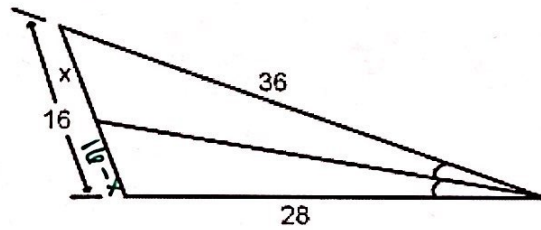


$$\frac{16.5}{11} = \frac{p}{18}$$

$$11p = 297$$

$$\boxed{p = 27}$$

4.



$$\frac{36}{x} = \frac{28}{16-x}$$

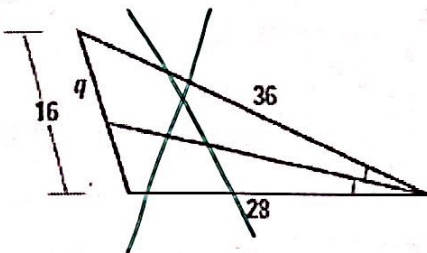
$$28x = 36(16-x)$$

$$28x = 576 - 36x$$

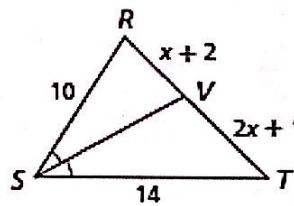
$$64x = 576$$

$$\boxed{x = 9}$$

5.



6.



$$\frac{x+2}{10} = \frac{2x+1}{14}$$

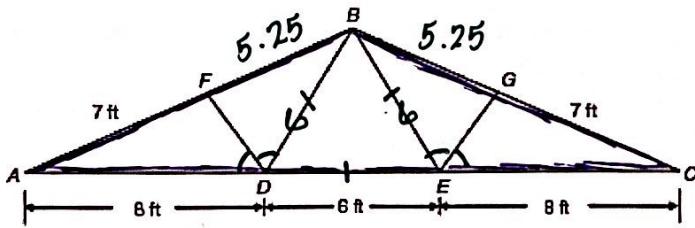
$$14(x+2) = 10(2x+1)$$

$$14x+28 = 20x+10$$

$$-6x = -18$$

$$\boxed{x = 3}$$

7. The figure shows a truss for a roof. \overline{DF} bisects $\angle ADB$ and \overline{EG} bisects $\angle CEB$. $\triangle DBE$ is an equilateral triangle. Find the perimeter of the truss.



$$\frac{6}{x} = \frac{8}{7}$$

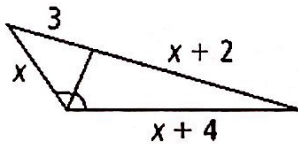
$$8x = 42$$

$$x = 5.25$$

$$P = 46.5 \text{ ft}$$

8. Solve for x (Hint – you will have to solve by factoring).

a.



$$\frac{3}{x} = \frac{x+2}{x+4}$$

$$3(x+4) = x(x+2)$$

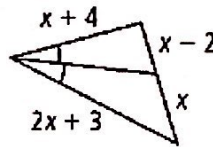
$$\begin{array}{r} 3x + 12 = x^2 + 2x \\ -x^2 - 12 \quad -3x - 12 \\ \hline 0 = x^2 - x - 12 \end{array}$$

$$0 = x^2 - x - 12$$

$$0 = (x-4)(x+3)$$

$$x = 4 \quad x = -3$$

b.



$$\frac{x+4}{x-2} = \frac{2x+3}{x}$$

$$x(x+4) = (x-2)(2x+3)$$

$$x^2 + 4x = 2x^2 + 3x - 4x - 6$$

$$\begin{array}{r} x^2 + 4x = 2x^2 - x - 6 \\ -x^2 - 4x \quad -x^2 - 4x \\ \hline 0 = x^2 - 5x - 6 \end{array}$$

$$0 = x^2 - 5x - 6$$

$$0 = (x-6)(x+1)$$

$$x = 6 \quad x = -1$$