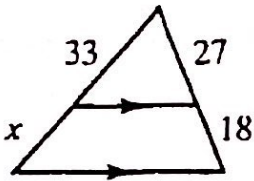


Day 4 – Side Splitter Theorem – Practice

1. Find the value of x.

a.

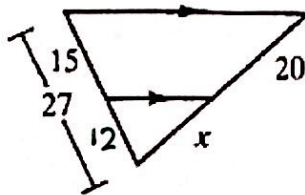


$$\frac{33}{x} = \frac{27}{18}$$

$$27x = 594$$

$$\boxed{x = 22}$$

b.

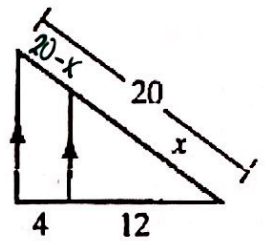


$$\frac{15}{12} = \frac{20}{x}$$

$$15x = 240$$

$$\boxed{x = 16}$$

c.



$$\frac{x}{20-x} = \frac{12}{4}$$

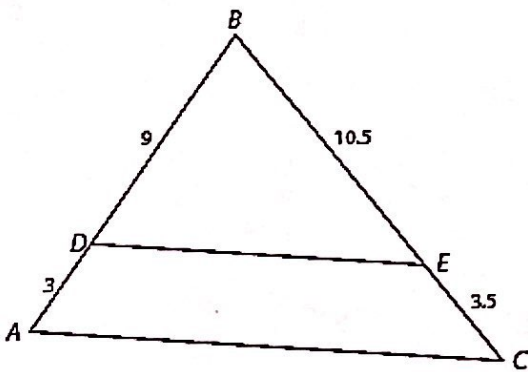
$$4x = 12(20-x)$$

$$4x = 240 - 12x$$

$$16x = 240$$

$$\boxed{x = 15}$$

2. Prove $\overline{DE} \parallel \overline{AC}$

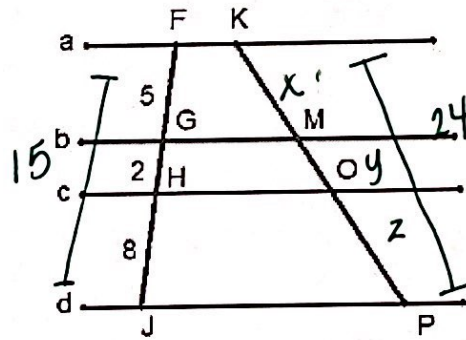


$$\frac{9}{3} = \frac{10.5}{3.5}$$

The sides are proportional
so $\overline{DE} \parallel \overline{AC}$.

$$3 = 3$$

3. Find KM, MO, & OP if $a \parallel b \parallel c \parallel d$ and $KP = 24$.



$$\frac{5}{15} = \frac{x}{24}$$

$$15x = 120$$

$$x = 8$$

$$\boxed{KM = 8}$$

$$\frac{2}{15} = \frac{y}{24}$$

$$4.8 = 15y$$

$$y = 3.2$$

$$\boxed{MO = 3.2}$$

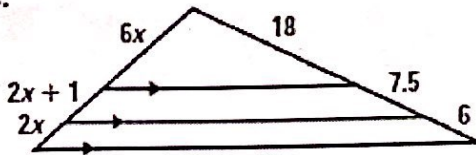
$$\frac{8}{15} = \frac{z}{24}$$

$$15z = 192$$

$$z = 12.8$$

$$\boxed{OP = 12.8}$$

4. Find the value of x.



$$\frac{6x}{2x+1} = \frac{18}{7.5}$$

$$18(2x+1) = 45x$$

$$36x + 18 = 45x$$

$$18 = 9x$$

$$\boxed{2 = x}$$

5. The real estate term *lake frontage* refers to the distance along the edge of a piece of property that touches a lake.

a. Find the lake frontage (to the nearest tenth) for each lot shown.

$$\frac{A}{174} = \frac{48}{164}$$

$$\frac{B}{174} = \frac{55}{164}$$

$$\frac{C}{174} = \frac{61}{164}$$

$$164A = 8352$$

$$164B = 9570$$

$$164C = 10614$$

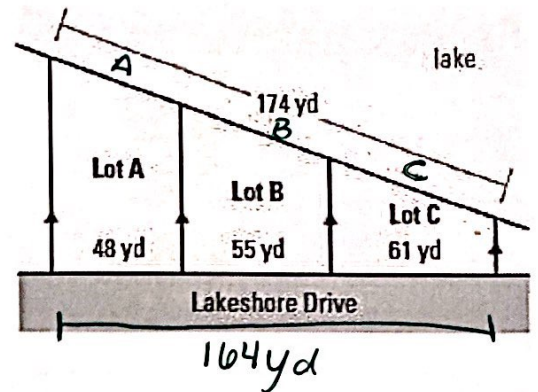
$$A = 50.9 \text{ yd}$$

$$B = 58.4 \text{ yd}$$

$$C = 64.7 \text{ yd}$$

b. In general, the more lake frontage a lot has, the higher the selling price. Which of the lots should be listed for the highest price?

lot C because it has the largest lake frontage. $(64.7 > 58.4 > 50.9)$



c. Suppose that lot prices are in the same ratio as lake frontages. If the least expensive lot is \$100,000, what are the prices of the other lots?

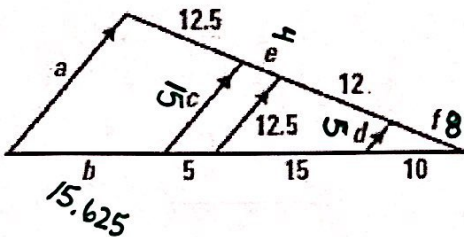
$$\frac{\text{Lake Frontage}}{\text{price}} = \frac{58.4}{B} = \frac{50.9}{100,000}$$

$$B = 114,735$$

$$\frac{64.7}{C} = \frac{50.9}{100,000}$$

$$C = 127,112$$

6. Find the length of each variable.



$$\textcircled{1} \frac{f}{12.5} = \frac{10}{15}$$

$$15f = 120$$

$$f = 8$$

$$\textcircled{2} \frac{8}{d} = \frac{20}{12.5}$$

$$20d = 100$$

$$d = 5$$

$$\textcircled{3} \frac{12}{e} = \frac{15}{5}$$

$$15e = 60$$

$$e = 4$$

$$\textcircled{4} \frac{4}{12.5} = \frac{5}{b}$$

$$4b = 62.5$$

$$b = 15.625$$

$$\textcircled{5} \frac{24}{c} = \frac{8}{5}$$

$$8c = 120$$

$$c = 15$$

$$\textcircled{6} \frac{36.5}{a} = \frac{8}{5}$$

$$8a = 182.5$$

$$a = 22.8125$$