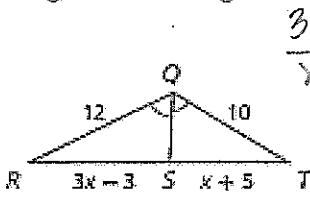


DINGU QUESTIONS - SECTIONS 7.4-7.6

Find the length of each segment.



$$\frac{3x-3}{x+5} = \frac{12}{10}$$

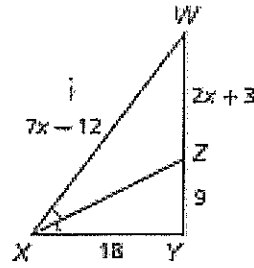
$$30x - 30 = 12x + 60$$

$$18x = 90$$

$$x = 5$$

1. \overline{RS} 12

2. \overline{ST} 10



$$\frac{2x+3}{9} = \frac{7x-12}{18}$$

3. \overline{XW} 30

4. \overline{WZ} 15

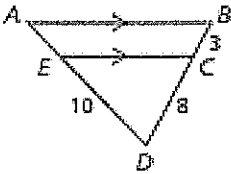
$$36x + 54 = 63x - 108$$

$$54 = 27x - 108$$

$$162 = 27x$$

$$x = 6$$

Find the length of each segment.

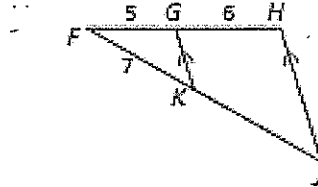


$$\frac{3}{8} = \frac{x}{10}$$

$$30 = 8x$$

$$x = 3.75$$

5. \overline{AE} 3.75



6. \overline{KJ} 8.4

$$\frac{5}{6} = \frac{7}{x}$$

$$5x = 42$$

$$x = 8.4$$

7. \overline{ST}

$$\frac{12}{14} = \frac{16}{x}$$

$$12x = 224$$

$$x = 18\frac{2}{3}$$

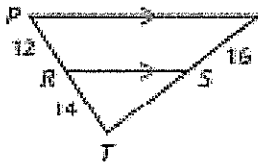
8. \overline{AB} 15

$$\frac{6}{8} = \frac{4y-1}{5y}$$

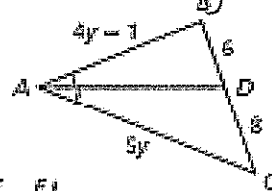
$$30y = 32y - 8$$

$$-2y = -8$$

$$y = 4$$



9. \overline{AC} 20



10.

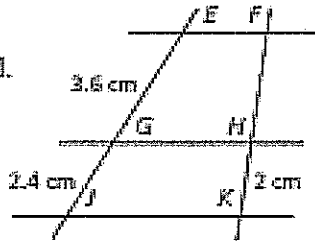
An artist drew a picture of railroad tracks such that the ties EF, GH, and JK are parallel.

What is the length of FH?

$$\frac{3.6}{2.4} = \frac{x}{2}$$

$$7.2 = 2.4x$$

$$x = 3$$



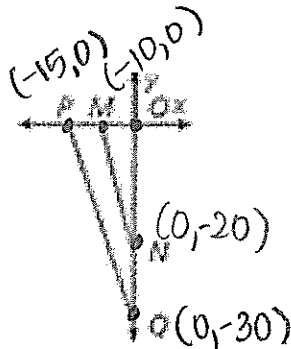
11.

Given that $\triangle MON \sim \triangle POQ$ and coordinates $P(-15, 0)$, $M(-10, 0)$, and $Q(0, -30)$, find the coordinates of N and the scale factor.

$$\frac{15}{10} = \frac{30}{x}$$

$$15x = 300$$

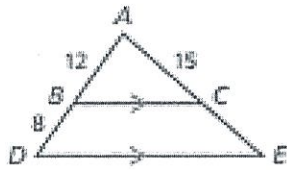
$$x = 20$$



$(0, -20); \frac{2}{3}$

Find each length.

12. \overline{AE} 25

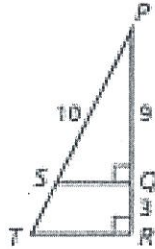


$$\frac{12}{8} = \frac{15}{x}$$

$$12x = 120$$

$$x = 10$$

13. \overline{PT} $13\frac{1}{3}$



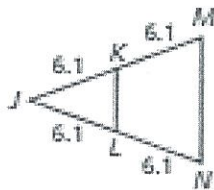
$$\frac{10}{x} = \frac{9}{3}$$

$$30 = 9x$$

Verify that the given segments are parallel.

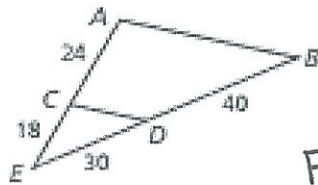
14. \overline{KL} and \overline{MN}

$$1 = 1$$



15. \overline{AB} and \overline{CD}

$$\frac{4}{3} = \frac{4}{3}$$



Find the length of each segment:

16. \overline{SU} 4

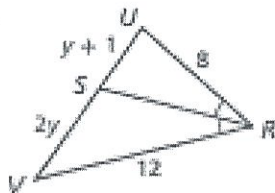
$$\frac{y+1}{2y} = \frac{8}{12}$$

$$12y + 12 = 16y$$

$$12 = 4y$$

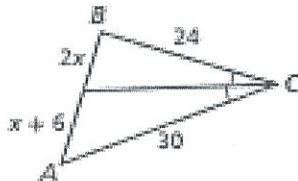
$$y = 3$$

17. \overline{SV} 6



18. Find the length of the third side of $\triangle ABC$.

18



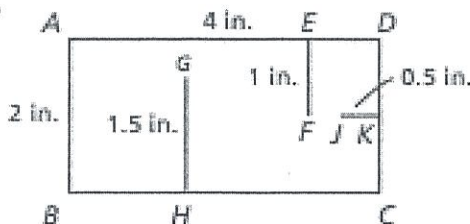
$$\frac{2x}{x+6} = \frac{24}{30}$$

$$20x = 24x + 144$$

$$36x = 144$$

$$x = 4$$

The scale drawing of the playhouse is 1 in. : 10 ft. Find the actual lengths of the following walls.

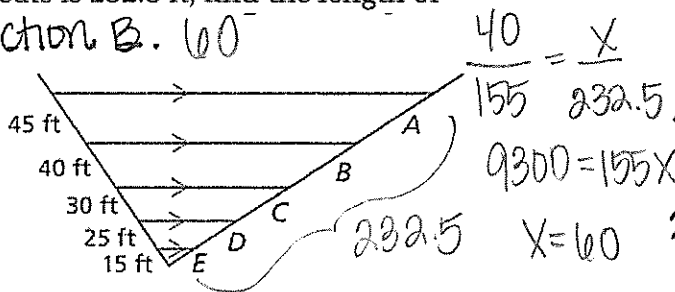


19. \overline{GH} $\frac{1}{10} = \frac{1.5}{x} \Rightarrow \cancel{15} 15 \text{ ft}$

20. \overline{EF} $\frac{1}{10} = \frac{1}{x} \Rightarrow 10 \text{ ft}$

21. \overline{DC} $\frac{1}{10} = \frac{2}{x} \Rightarrow 20 \text{ ft}$

22. **Architecture** An amphitheater is being built according to the design shown. If the total footage on the right of the rows of seats is 232.5 ft, find the length of Section B.

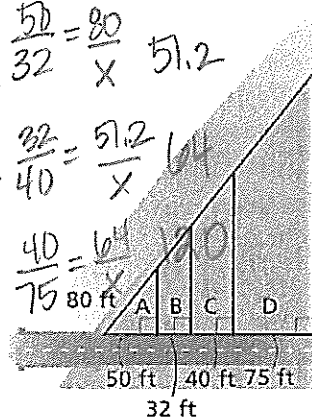


$$\frac{40}{155} = \frac{x}{232.5}$$

$$9300 = 155x$$

$$x = 60$$

- Geography** Riverside Park has campsites available for rent. Lot A has 50 ft of street frontage and 80 ft of river frontage. Find the river frontage for lots B, C, and D.



28. B $\frac{50}{32} = \frac{80}{x}$ 51.2

29. C $\frac{32}{40} = \frac{51.2}{x}$ 64

30. D $\frac{40}{75} = \frac{64}{x}$ 120

23. Jake wants to know the height of the oak tree in his front yard. He measured his height as 68 inches and his shadow as 34 inches. At the same time, the tree has a shadow of 5.5 feet. How tall is the tree?

$$\frac{68}{34} = \frac{x}{66}$$

24. **Recreation** The kiddie pool and the lap pool at Centerville Park are similar rectangles. The lap pool measures 25 ft wide by 48 ft long. The kiddie pool is 8 ft long. How wide is the kiddie pool to the nearest tenth?

$$\frac{25}{48} = \frac{x}{8}$$

$$200 = 48x$$

$$x = 4.2 \text{ ft}$$

$$34x = 4488$$

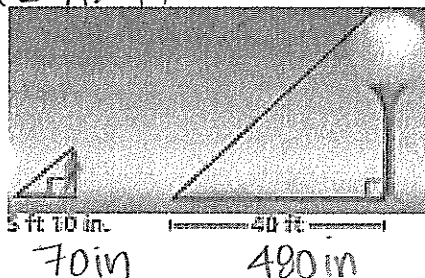
$$x = 132 \text{ in}$$

$$11 \text{ ft}$$

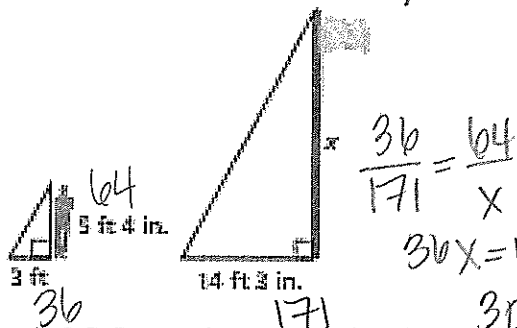
25. A student who is 5 ft 3 in. tall measured her shadow and the shadow cast by a water tower shaped like a golf ball. What is the height of the tower?

$$\frac{70}{480} = \frac{63}{x}$$

$$70x = 30240$$



26. To find the height of a flagpole, Casey measured her own shadow and the flagpole's shadow. Given that Casey's height is 5 ft 4 in., what is the height x of the flagpole?



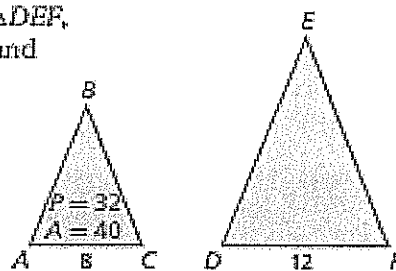
$$\frac{36}{171} = \frac{64}{x}$$

$$36x = 10944$$

$$x = 304 \text{ in}$$

$$25 \text{ ft}, 4 \text{ in}$$

Given that $\triangle ABC \sim \triangle DEF$, find the perimeter P and area A of $\triangle DEF$.



31. Area $\frac{90}{40} = \frac{P}{32}$

32. Perimeter $\frac{40}{12} = \frac{A}{36}$

$$\frac{8}{12} = \frac{2}{3}$$

$$\frac{4}{9} = \frac{40}{x}$$

$$\frac{2}{3} = \frac{32}{x}$$

$$4x = 360$$

$$x = 90$$

$$2x = 96$$

$$x = 48$$

27. Jonathan is 3 ft from a lamppost that is 12 ft high. The lamppost and its shadow form the legs of a right triangle. Jonathan is 6 ft tall and is standing parallel to the lamppost. How long is Jonathan's shadow?

$$\frac{3}{12} = \frac{x}{6}$$

$$18 = 12x$$

$$x = 1.5$$

16
3

10

