

Find the length of each segment.

2. \overline{RN}



$$\frac{8}{10} = \frac{5}{x}$$

$$8x = 50$$

$$x = \frac{25}{4}$$

$$RN = \frac{25}{4}$$

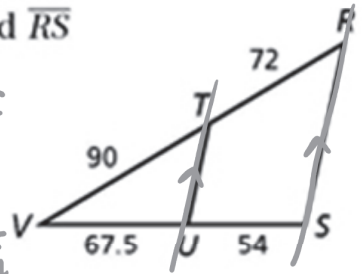
Verify that the given segments are parallel.

4. \overline{TU} and \overline{RS}

$$\frac{VT}{VU} = \frac{TR}{US}$$

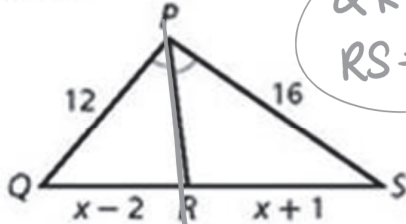
$$\frac{90}{67.5} = \frac{72}{54}$$

$$\frac{4}{3} = \frac{4}{3} \checkmark \therefore \overline{TU} \parallel \overline{RS}$$



Find the length of each segment.

6. \overline{QR} and \overline{RS}



$QR = 9$
 $RS = 12$

$$\frac{12}{x-2} = \frac{16}{x+1}$$

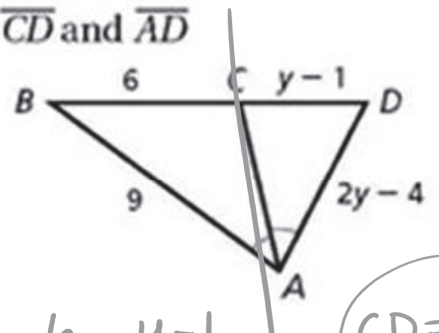
$$12(x+1) = 16(x-2)$$

$$12x + 12 = 16x - 32$$

$$-4x = -44$$

$$x = 11$$

7. \overline{CD} and \overline{AD}



$$\frac{6}{9} = \frac{y-1}{2y-4}$$

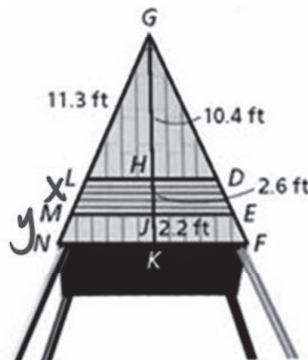
$CD = 4$
 $AD = 6$

$$6(2y-4) = 9(y-1)$$

$$12y - 24 = 9y - 9$$

$$3y = 15, y = 5$$

12. **Architecture** The wooden treehouse has horizontal siding that is parallel to the base. What are LM and MN to the nearest hundredth?



$$\frac{11.3}{y} = \frac{10.4}{2.2}$$

$$10.4y = 24.86$$

$$y = 2.39$$

$$LMN = 2.39 \text{ ft}$$

~~$$\frac{11.3}{x} = \frac{10.4}{2.6}$$~~

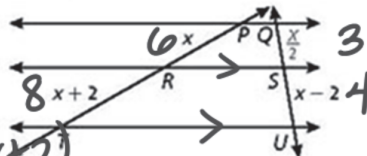
$$10.4x = 29.38$$

$$x = 2.83$$

$$LM = 2.83$$

25. Given that $\overrightarrow{PQ} \parallel \overrightarrow{RS} \parallel \overrightarrow{TU}$

- a. Find PR , RT , QS , and SU .
 b. Use your results from part b to write a proportion relating the segment lengths.



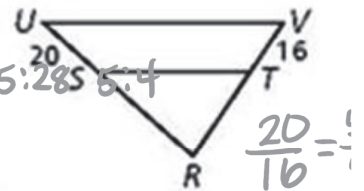
~~$\frac{x}{x+2} = \frac{x/2}{x-2}$~~
 $x(x-2) = \frac{x}{2}(x+2)$
 $x^2 - 2x = \frac{x^2}{2} + x$
 $2(x^2 - 3x) = (x^2) + 2x$
 $2x^2 - 6x = x^2 + 2x$
 $x^2 - 6x = 0$

$x(x-6) = 0$
 $x = 0$ or $x = 6$
 a) $PR = 6$
 $RT = 8$
 $QS = 3$
 $SU = 4$

b) $\frac{PR}{RT} = \frac{QS}{SU}$
 $\frac{6}{8} = \frac{3}{4}$
 $\frac{3}{4} = \frac{3}{4} \checkmark$

32. Which dimensions let you conclude that $\overline{UV} \parallel \overline{ST}$?

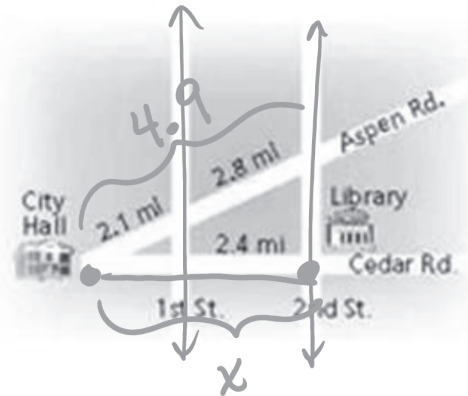
- A $SR = 12, TR = 9$ $12:9 = 4:3$ C $SR = 35, TR = 28$ $35:28 = 5:4$
 B $SR = 16, TR = 20$ $16:20 = 4:5$ D $SR = 50, TR = 48$



34. On the map, 1st St. and 2nd St. are parallel. What is the distance from City Hall to 2nd St. along Cedar Rd.?

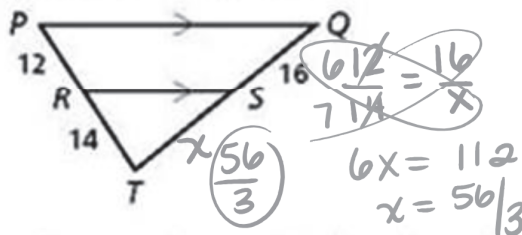
- A 1.8 mi C 4.2 mi
 B 3.2 mi D 5.6 mi

~~$\frac{4.9}{x} = \frac{2.8}{2.4}$~~
 $2.8x = 11.76$
 $x = 4.2$

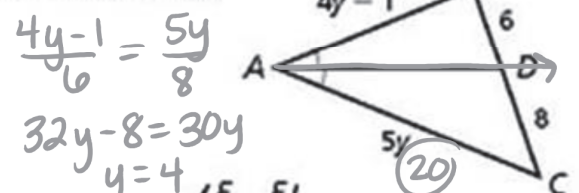


Find the length of each segment.

1. \overline{ST}



2. \overline{AB} and \overline{AC}



3. An artist drew a picture of railroad tracks such that the ties \overline{EF} , \overline{GH} , and \overline{JK} are parallel. What is the length of \overline{FH} ?

$\frac{3.6}{2.4} = \frac{x}{2}$
 $x = 3$

