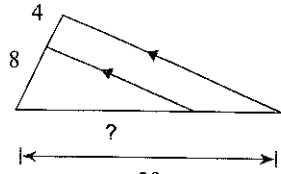


Triangle Proportionality and Mid-Segment Theorem Date _____ Period _____

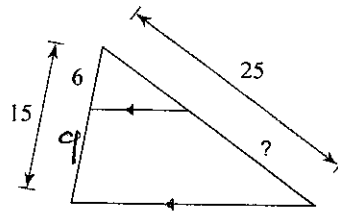
Find the missing length indicated.

1)



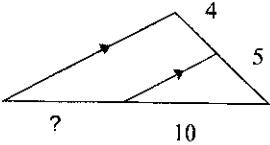
$$\frac{8}{12} \times \frac{x}{30} \quad \frac{12x = 240}{12} \quad \boxed{x = 20}$$

2)



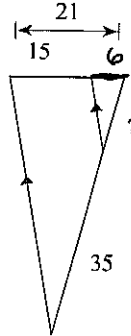
$$\frac{15}{9} \times \frac{25}{x} \rightarrow \frac{225 = 15x}{15} \quad \boxed{x = 15}$$

3)



$$\frac{4}{5} \times \frac{x}{10} \quad \frac{5x = 40}{5} \quad \boxed{x = 8}$$

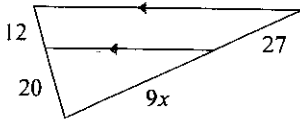
4)



$$\frac{6}{15} \times \frac{x}{35} \rightarrow \frac{15x = 210}{15} \quad \boxed{x = 14}$$

Solve for x.

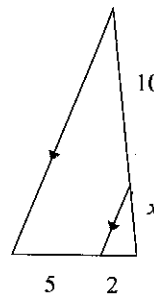
5)



$$\frac{12}{20} \times \frac{27}{9x}$$

$$\frac{108x = 540}{108} \quad \boxed{x = 5}$$

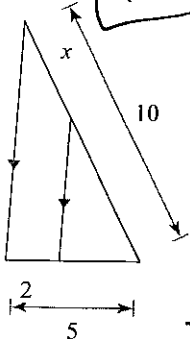
6)



$$\frac{5}{2} \times \frac{10}{x}$$

$$\frac{5x = 20}{5} \quad \boxed{x = 4}$$

7)

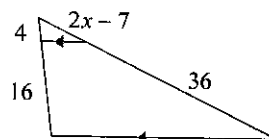


$$\frac{pt}{whole} = \frac{pt}{whole}$$

$$\frac{2}{5} \times \frac{x}{10}$$

$$\frac{5x = 20}{5} \quad \boxed{x = 4}$$

8)



$$\frac{4}{16} \times \frac{2x-7}{36}$$

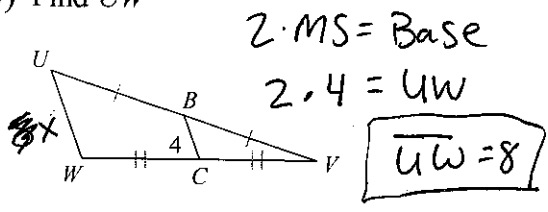
$$16(2x-7) = 144$$

$$32x - 112 = 144$$

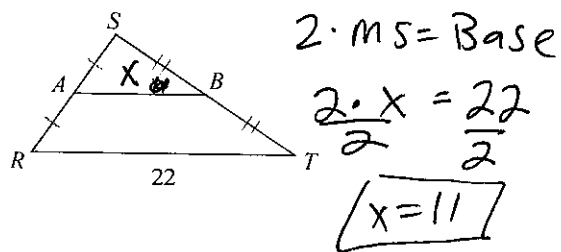
$$+112 \quad +112 \quad \frac{32x = 256}{32} \rightarrow \boxed{x = 8}$$

Find the missing length indicated. HINT: These are all midsegments since each side is cut into two congruent parts.

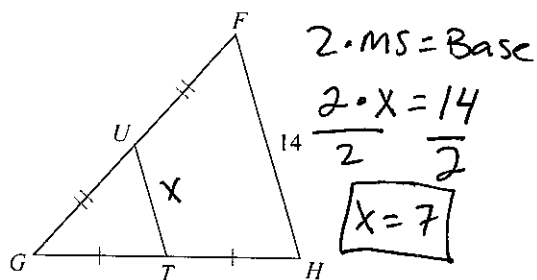
9) Find UW



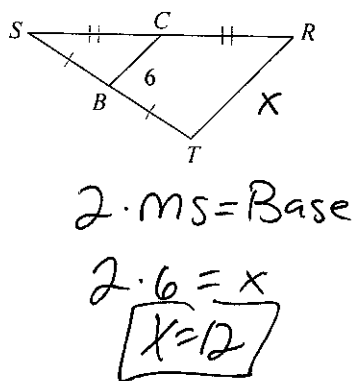
10) Find AB



11) Find TU

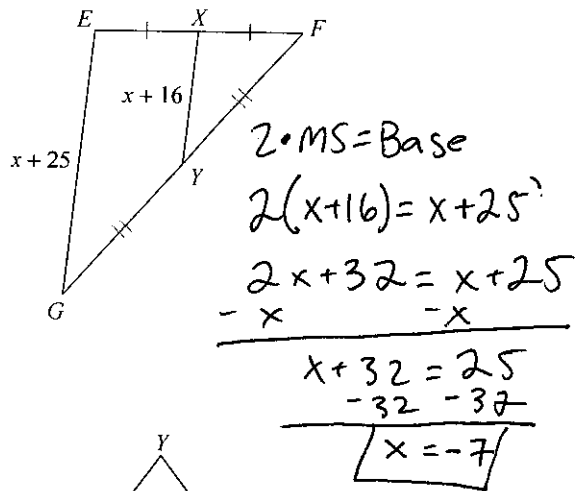


12) Find TR

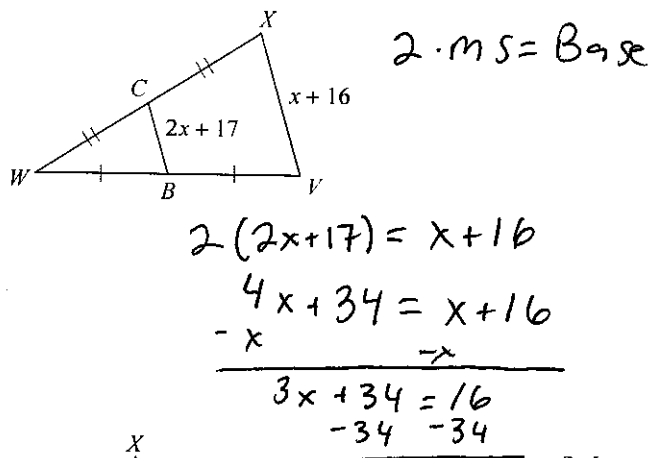


Solve for x .

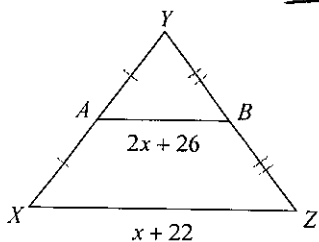
13)



14)

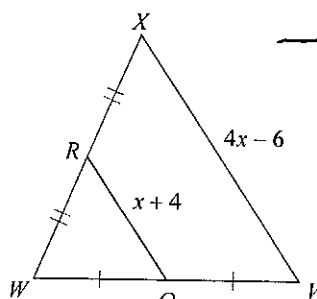


15)



$2 \cdot MS = \text{Base}$
 $2(2x+26) = x+22$
 $4x+52 = x+22$
 $-x \quad -x$
 $3x+52 = 22$
 $\frac{3x}{3} = \frac{-30}{3}$
 $x = -10$

16)



$2 \cdot MS = \text{Base}$
 $2(x+4) = 4x-6$
 $2x+8 = 4x-6$
 $-2x+6 \quad -2x+6$
 $14 = 2x$
 $\frac{14}{2} = \frac{2x}{2}$
 $x = 7$