Ch. 8 Review

1. A triangle has sides of given length: 56, 72, 120

Is this triangle acute, obtuse, or right?

$120^2 > 72^2 + 56^2$

$14400 > 8320$

Obtuse

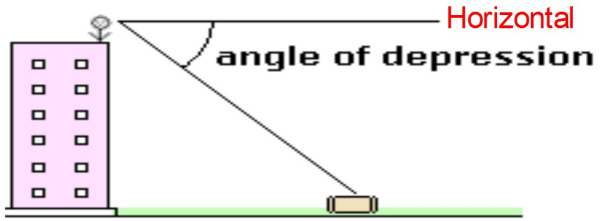
2. Given $\triangle WAT$ is a right triangle and Tan W = $\frac{11}{60}$

Find Cos W and Sin W as ratios.

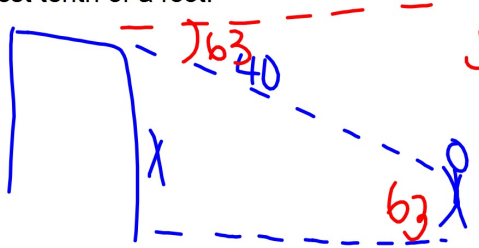
$\cos W = \frac{60}{61}$

$\sin W = \frac{11}{61}$

Angle of Depression : Angle measured from the Horizontal downwards.



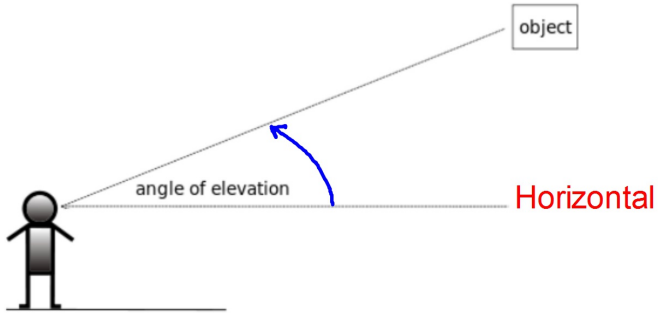
3. A fireman uses a 40 foot long ladder to reach a person on the balcony of their apartment. If the person on the balcony sees the fireman at the bottom of the ladder with an angle of depression of 63° find the height of the balcony to the nearest tenth of a foot.



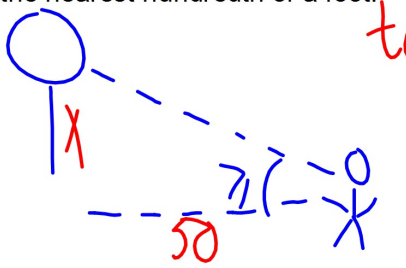
$\sin 63 = \frac{X}{40}$

$X = 35.6$ ft

Angle of Elevation : Angle measured from the Horizontal upwards.



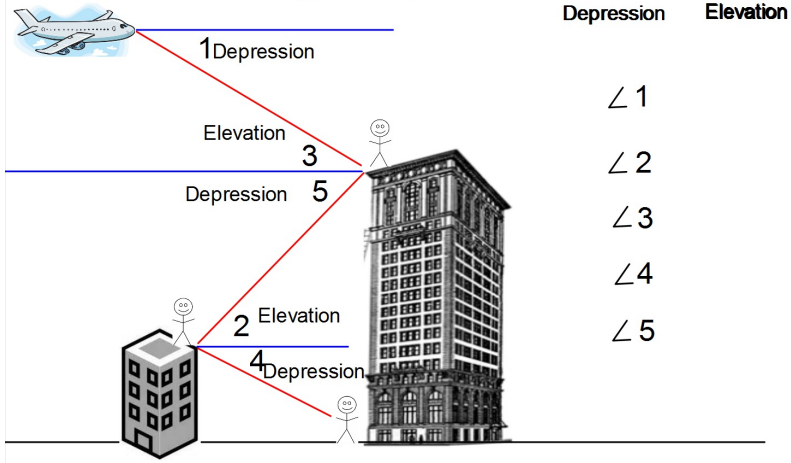
4. A weather balloon is released and since there is no wind it rises straight up. A few moments you see the balloon with an angle of elevation of 71°. If you are 50 feet from where the balloon was released find the height of the balloon to the nearest hundredth of a foot.



$\tan 71 = \frac{X}{50}$

$X = 145.21$ ft

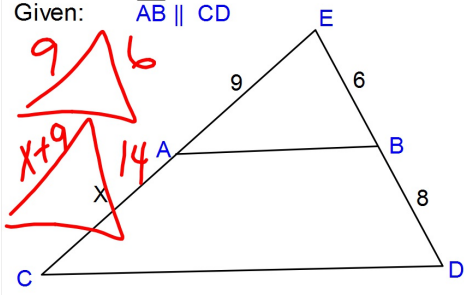
5. Describe each angle in the diagram as either an angle of elevation or an angle of depression.



	Depression	Elevation
∠1		
∠2		
∠3		
∠4		
∠5		

Section 7-5: Proportions in Triangles

Given: $\overline{AB} \parallel \overline{CD}$



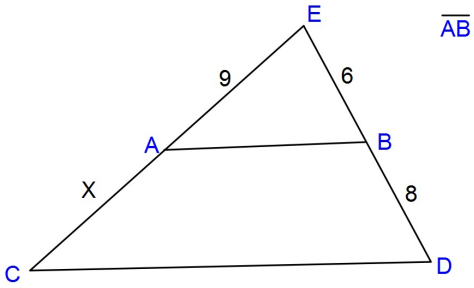
Draw the triangles separately and label the vertices with the variables and put the lengths on the sides.

Find the value of x

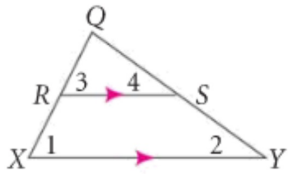
$\frac{9}{x+9} = \frac{6}{14}$

Side-Splitter Theorem

If a line is parallel to one side of a triangle and intersects the other two sides, then it divides those sides proportionally.



$\overline{AB} \parallel CD$

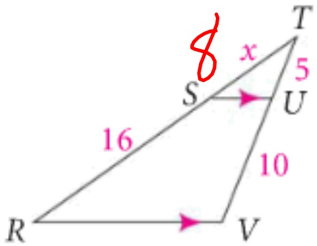


Similar triangles by

$$\frac{XR}{RQ} = \frac{YS}{SQ}$$

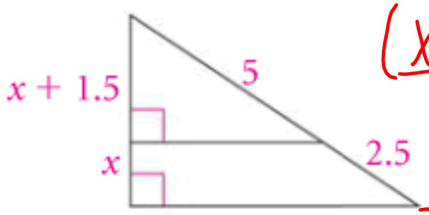
Find the value of x.

A.)



$$\frac{16}{X} = \frac{10}{5}$$

B.



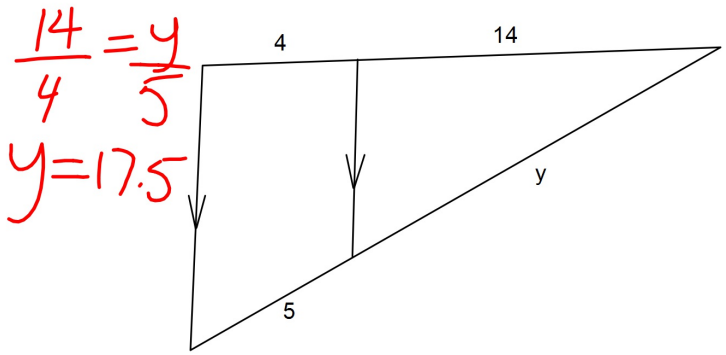
$$\frac{(X+1.5)}{X} = \frac{5}{2.5}$$

$$2.5X + 3.75 = 5X$$

$$3.75 = 2.5X$$

$$X = 1.5$$

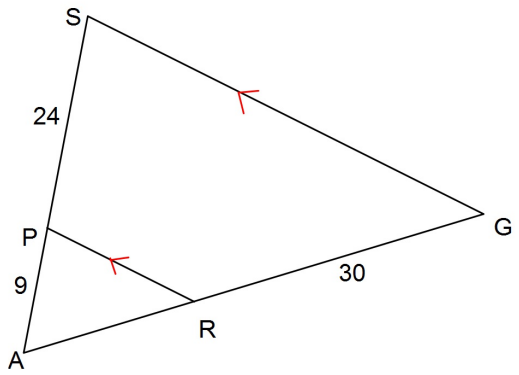
Find the value of y.



$\frac{14}{4} = \frac{y}{5}$

$y = 17.5$

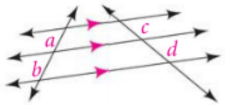
Find the length of $\overline{AG}$



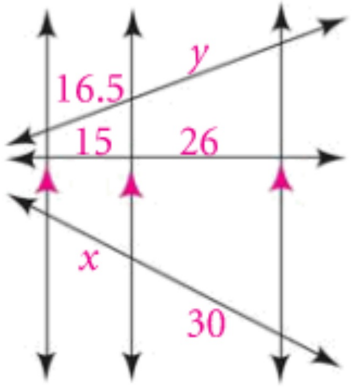
Corollary — **Corollary to Theorem 7-4**

If three parallel lines intersect two transversals, then the segments intercepted on the transversals are proportional.

$\frac{a}{b} = \frac{c}{d}$



Solve for x and y.



$\frac{15}{16.5} = \frac{26}{y}$

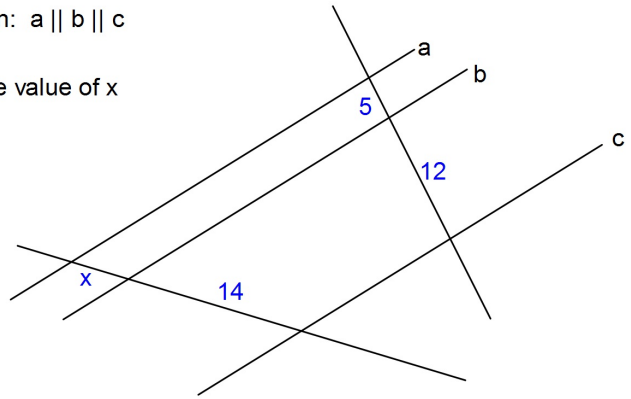
$15y = 429$

$y = 28.6$

$\frac{15}{x} = \frac{26}{30}$ $x = 17.3$

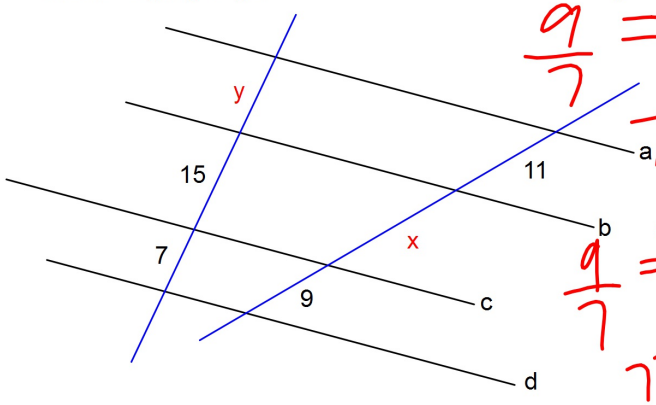
Given: a || b || c

Find the value of x



Given: a || b || c || d

Find the value of x and y



$\frac{9}{7} = \frac{x}{15}$

$7x = 135$

$x = 19.28$

$\frac{9}{7} = \frac{11}{y}$

$77 = 9y$

$y = 8.5$