

Name key

7.3-7.5 Similar Triangles Practice

In exercises 1-3, write a similarity statement for two triangles that are similar. Justify why each pair is similar.

1.

$\triangle GHR \sim \triangle RHI$
 $\triangle IGR \sim \triangle IRI$
 AA Similarity

3rd \angle s must be \cong

2.

$\triangle LMN \sim \triangle ONK$
 AA Similarity

3.

$\triangle ABC \sim \triangle EDC$
 AA Similarity

All measurements are in centimeters. Determine the following measurements. **Show all geometry work.**

4. $\triangle TAR \sim \triangle MAC$

$MC = 10.5 \text{ cm}$

$\frac{MA}{AT} = \frac{MC}{RT}$

$\frac{3}{2} = \frac{x}{7}$

$7.3 = 2x$

$x = 10.5$

5. $\triangle XYZ \sim \triangle QRS$

$QR = 4.84 \text{ cm}$ $QS = 11.44 \text{ cm}$

$\frac{QR}{XY} = \frac{RS}{YZ}$

$\frac{QR}{12.1} = \frac{7.8}{19.5}$ $QR = 4.84$

$\frac{QS}{XZ} = \frac{RS}{YZ}$

$\frac{QS}{28.6} = \frac{7.8}{19.5}$

$QS = 11.44$

6. $\triangle ABC \sim \triangle EDC$

$CD = 13.5 \text{ cm}$ $AB = 10 \text{ cm}$

$\frac{AB}{DE} = \frac{CA}{EC}$

$\frac{CD}{BC} = \frac{CE}{AC}$

$\frac{6}{22.5} = \frac{(87/4)}{(29/3)}$

$CD = 13.5$

$AB = 10 \text{ cm}$

7. $\triangle TRS \sim \triangle TQP$

$TS = 15 \text{ cm}$ $QP = 51 \text{ cm}$

$\frac{TS}{TP} = \frac{TR}{TQ}$

$\frac{x}{x+30} = \frac{8}{24}$

$24x = 8(x+30)$

$24x = 8x + 240$

$16x = 240$

$x = 15$

$TS = 15$

$8y = 24 \cdot 17$

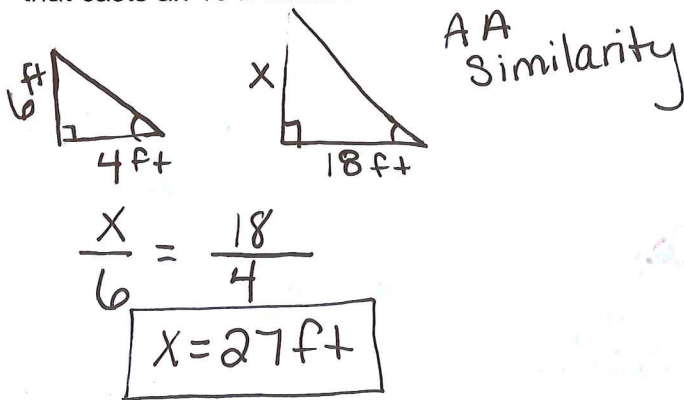
$8y = 408$

$y = 51$

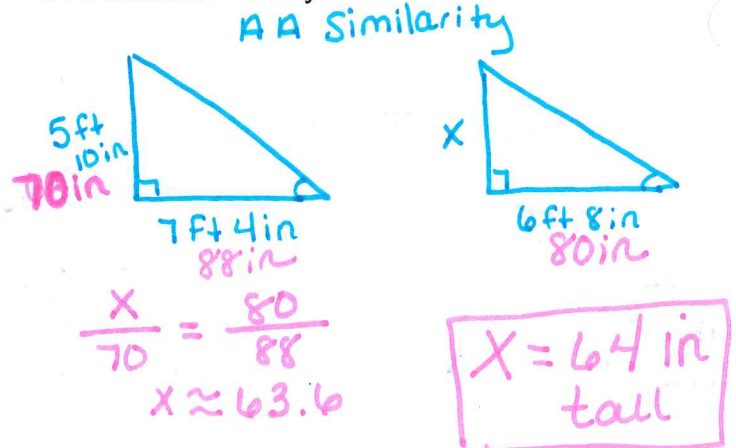
$QP = 51$

7.3-7.5 Indirect Measurement with Similar Triangles

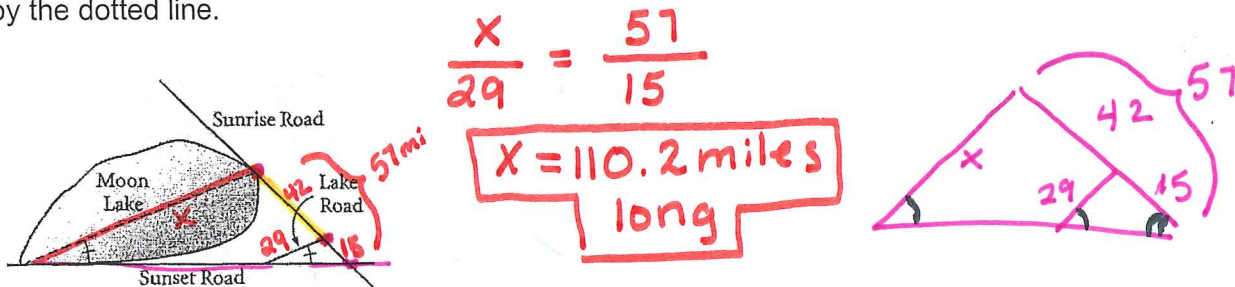
1. At a certain time of day, a 6 ft man casts a 4 ft shadow. At the same time of day, how tall is a tree that casts an 18 ft shadow?



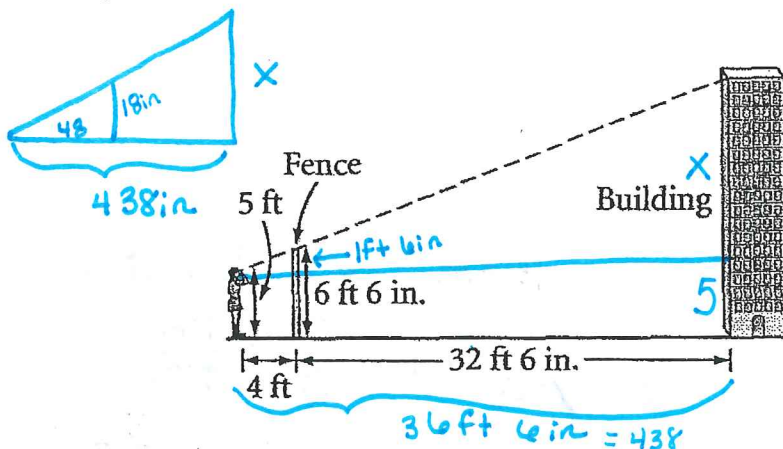
2. If a 5 ft 10 in. person casts a 7 ft 4 in. shadow, how tall is a person who, at the same time, casts a 6 ft 8 in. shadow? Give your answer to the nearest inch.



4. Sunrise Road is 42 miles long between the edge of Moon Lake and Lake Road and 15 miles long between Lake Road and Sunset Road. Lake Road is 29 miles long. Find the length of Moon Lake as indicated by the dotted line.



5. Martha is standing 4 ft behind a fence 6 ft 6 in. tall. When she looks over the fence, she can just see the top edge of a building. She knows that the building is 32 ft 6 in. behind the fence. Her eyes are 5 ft from the ground. How tall is the building? Give your answer to the nearest foot.



6. You need to add a support under the ramp. How many and long should the supports be? (One is drawn for you). *oops! Fix to say 1.8 meters apart*

