Simplify the following radicals:

$\sqrt{128}$

$\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}$

$8\sqrt{2}$

$5\sqrt{700}$

$5\sqrt{2 \cdot 2 \cdot 5 \cdot 5 \cdot 7}$

$50\sqrt{7}$

Homework Check:

2. $h = 40$ cm; $k = 40$ cm

4. $n = 54$ cm; $s = 42$ cm

6. Yes, $\Delta MOY \sim \Delta NOT$ by SAS.

8. $6\frac{2}{3}$ cm

Yes, $\angle QTA \cong \angle TUR$ and $\angle QAT \cong \angle ARU$.
$\Delta QTA \sim \Delta QUR$ by AA.

10. $t = 28$ cm; $s = 120$ cm

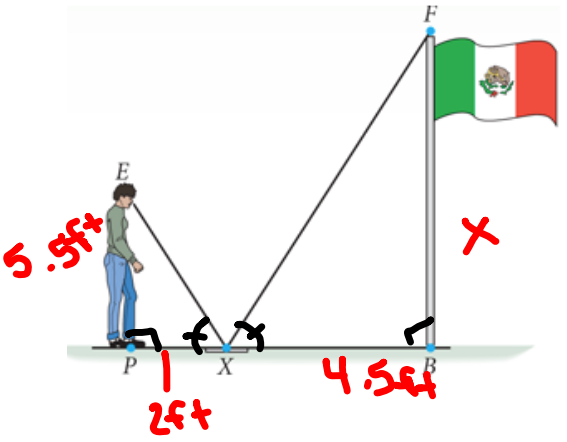
Yes, $\angle RGO \cong \angle FRG$ and $\angle GOF \cong \angle RFO$.
$\Delta GOS \sim \Delta RFS$ by AA.

12. $x = 50$; $y = 9$

14. EDC by AA

7.3 - Indirect Measurement

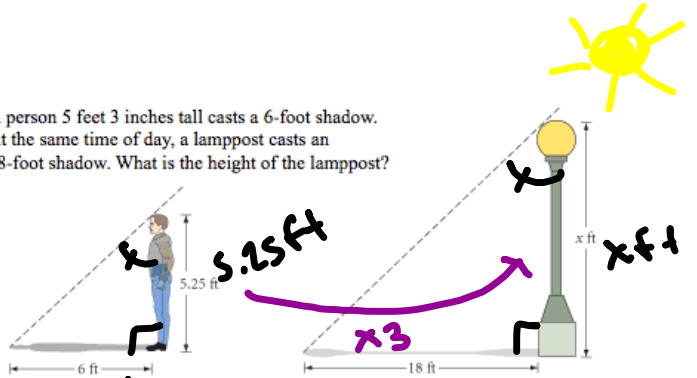
January 22, 2020



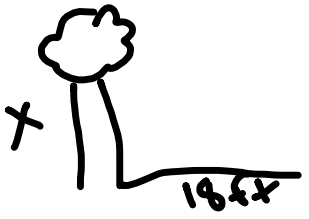
$$\frac{2}{4.5} = \frac{5.5}{x}$$

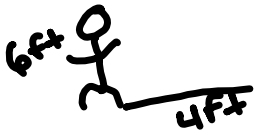
EXAMPLE

A person 5 feet 3 inches tall casts a 6-foot shadow. At the same time of day, a lamppost casts an 18-foot shadow. What is the height of the lamppost?



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?



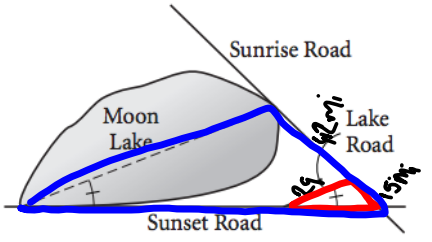


$\frac{4}{18} \cancel{=} \frac{6}{x}$

$\frac{108}{4} = \frac{4x}{4}$

27 ft

3. 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.

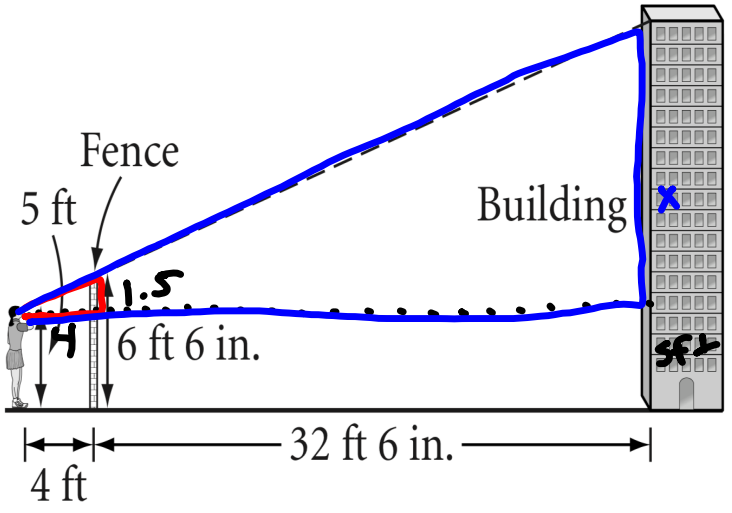


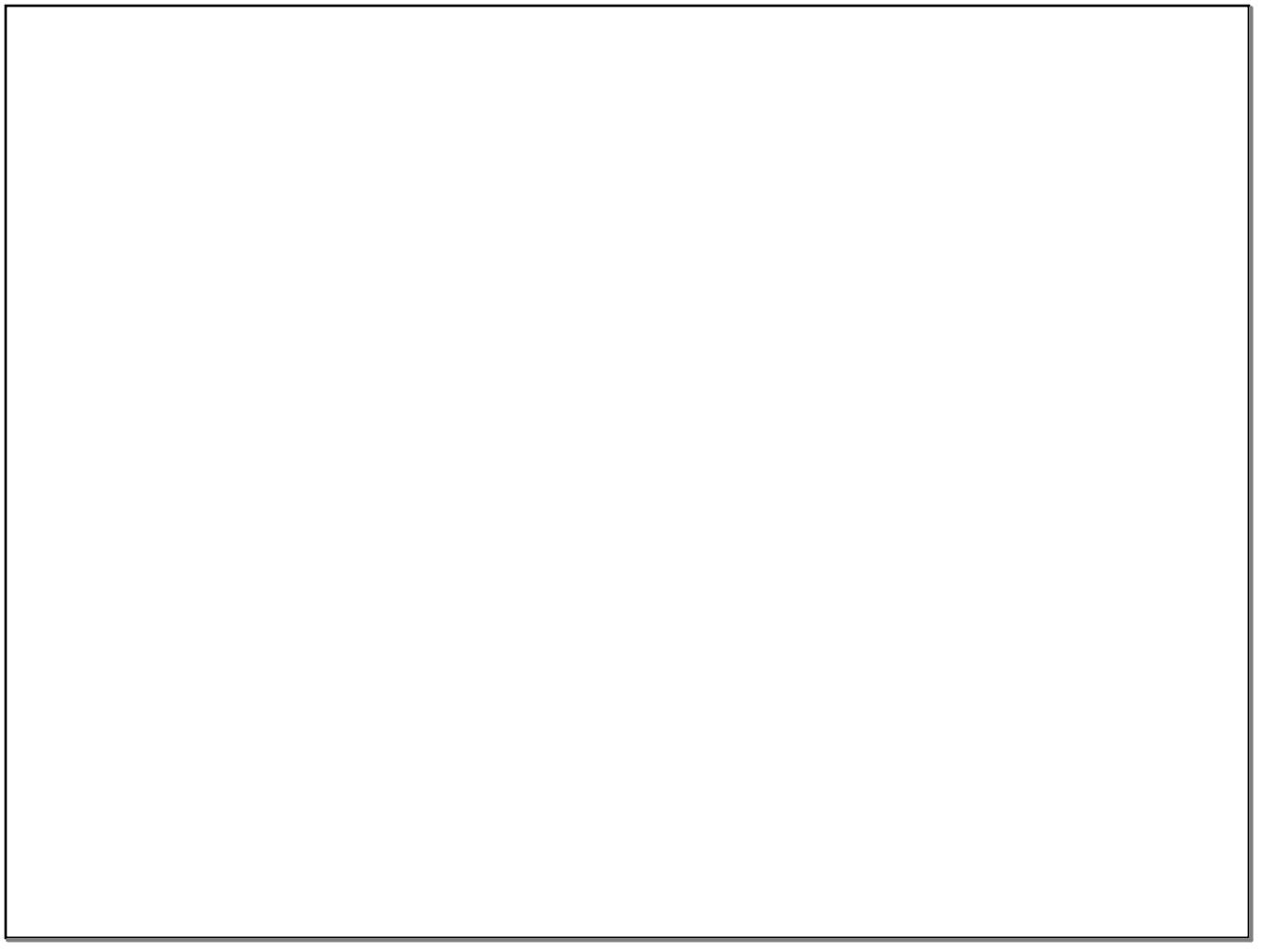
$$\frac{15}{57} \times \frac{29}{x}$$

$$1,653 = 15x$$

$$x = 110.2 \text{ mi}$$

4. Marta 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 half foot.



$\frac{4}{36.5} = \frac{1.5}{x}$

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