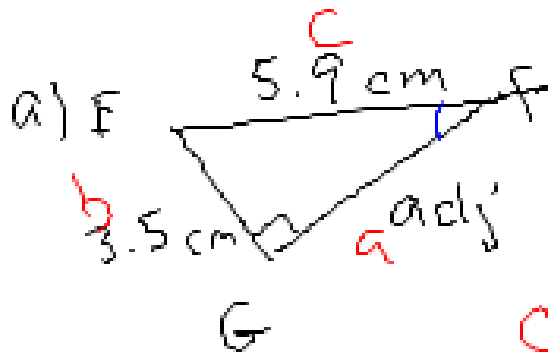


HW Review

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8.



$$\tan F = \frac{\text{opp}}{\text{adj}}$$

$$c^2 = a^2 + b^2$$

$$5.9^2 - (3.5)^2 = a^2$$

$$\sqrt{22.56} = \sqrt{a^2}$$

$$4.7497 = a$$

cm

$$\tan F = \frac{3.5}{4.7497}$$

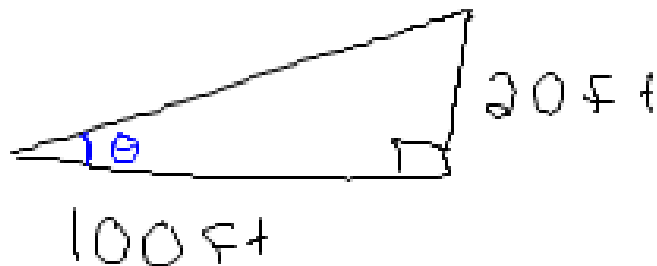
$$\angle F = \tan^{-1}\left(\frac{3.5}{4.7497}\right)$$

$$\angle F = 36.4^\circ$$

p. 76

20% grade

11



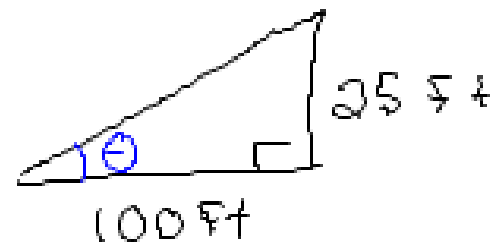
$$a) \tan \theta = \frac{20}{100}$$

$$\theta = \tan^{-1}\left(\frac{20}{100}\right)$$

$$\theta = 11.3^\circ$$

b.

25% grade

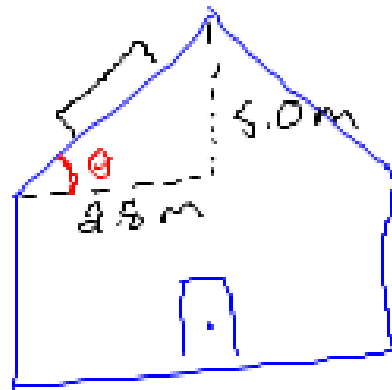


$$b) \tan \theta = \frac{25}{100}$$

$$\theta = \tan^{-1}\left(\frac{25}{100}\right)$$

$$\theta = 14.0^\circ$$

12.

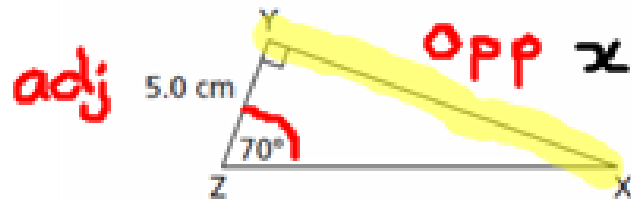


Good design
 $\theta \approx$ Latitude.

2.2 Using the Tangent Ratio to Calculate Lengths

1. Determine the length of XY to the nearest tenth of a centimetre.

tan

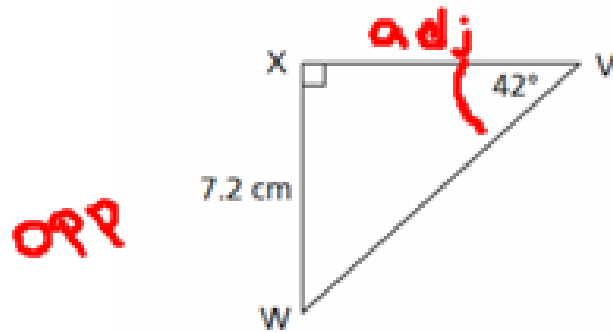


$$\tan 70 = \frac{\text{opp}}{\text{adj}}$$

$$(5.0) \tan 70 = \frac{x}{5.0} (5.0)$$

$$13.7 \text{ cm} = x$$

2. Determine the length of VX to the nearest tenth of a centimetre.



$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$

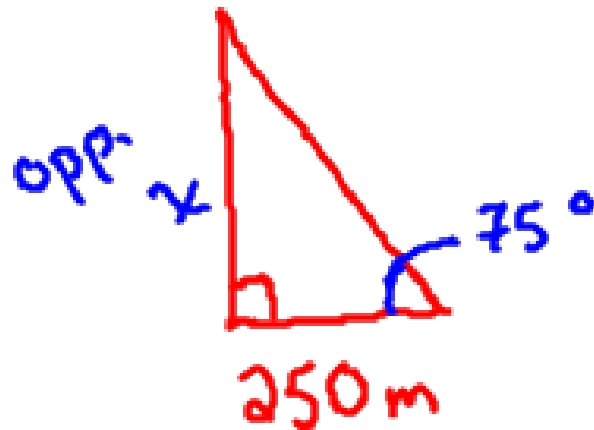
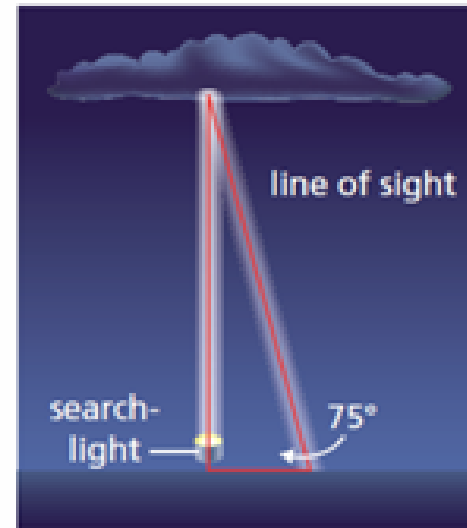
$$(x) \tan(42) = \frac{7.2}{x}$$

$$\frac{(x) \cdot \tan(42)}{\tan(42)} = \frac{7.2}{\tan(42)}$$

$$x = \frac{7.2}{\tan(42)}$$

$$x = 8.0 \text{ cm}$$

A searchlight beam shines vertically on a cloud. At a horizontal distance of 250 m from the searchlight, the angle between the ground and the line of sight to the cloud is 75° . Determine the height of the cloud to the nearest metre.



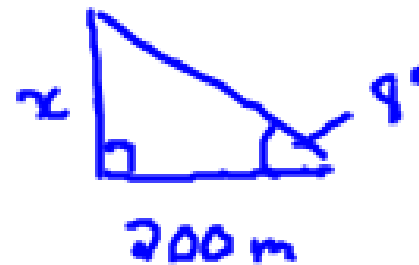
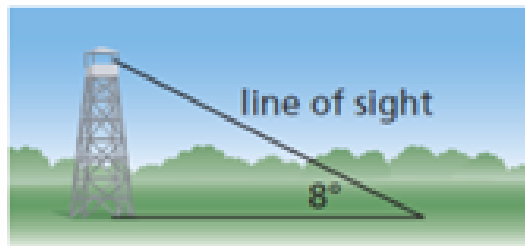
$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$

$$\tan(75) = \frac{x}{250}$$

$$x = (250)(\tan(75))$$

$$x = 933 \text{ m}$$

3. At a horizontal distance of 200 m from the base of an observation tower, the angle between the ground and the line of sight to the top of the tower is 8° . How high is the tower to the nearest metre? The diagram is *not* drawn to scale.



$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$

$$\tan(8) = \frac{x}{200}$$

$$200 \cdot \tan(8) = x$$

$$28\text{ m} = x$$

HW

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