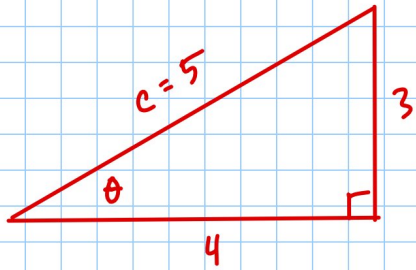


Practice Test Solutions

1)



$$3^2 + 4^2 = c^2$$

$$9 + 16 = 25 = c^2$$

$$c = 5$$

$$\sin \theta = \frac{3}{5}$$

$$\csc \theta = \frac{5}{3}$$

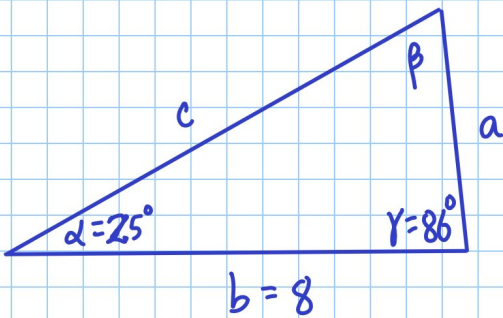
$$\cos \theta = \frac{4}{5}$$

$$\sec \theta = \frac{5}{4}$$

$$\tan \theta = \frac{3}{4}$$

$$\cot \theta = \frac{4}{3}$$

2)



$$a = \underline{3.62}$$

$$\text{Area} = \underline{14.44}$$

$$c = \underline{8.55}$$

$$\beta = \underline{69^\circ}$$

$$180 - 25 - 86 =$$

$$\frac{\sin 25^\circ}{a} = \frac{\sin 69^\circ}{8}$$

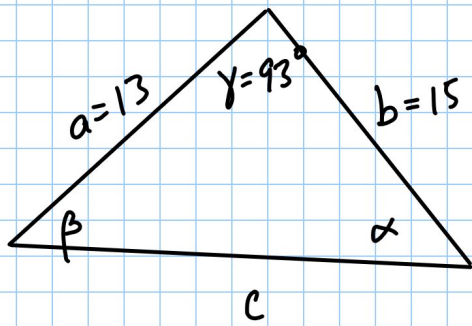
$$a = \frac{8 \sin 25^\circ}{\sin 69^\circ} = 3.62$$

$$\frac{\sin 86^\circ}{c} = \frac{\sin 69^\circ}{8}$$

$$c = \frac{8 \sin 86^\circ}{\sin 69^\circ} = 8.55$$

$$\begin{aligned} \text{Area} &= \frac{1}{2} ab \sin \gamma \\ &= \frac{1}{2} (3.62)(8) \sin 86^\circ \\ &= 14.44 \end{aligned}$$

3)



$$c = \frac{20.4}{}$$

$$\alpha = \frac{39.8^\circ}{}$$

$$\beta = \frac{47.2^\circ}{}$$

$$\text{Area} = \frac{97.4}{}$$

$$A = \frac{1}{2}(13)(15)\sin 93^\circ$$

$$c^2 = 13^2 + 15^2 - 2 \cdot 13 \cdot 15 \cos 93^\circ$$

$$c^2 = 414.41$$

$$c = 20.4$$

$$\frac{\sin 93^\circ}{20.4} = \frac{\sin \beta}{15}$$

$$\sin \beta = \frac{15 \sin 93^\circ}{20.4}$$

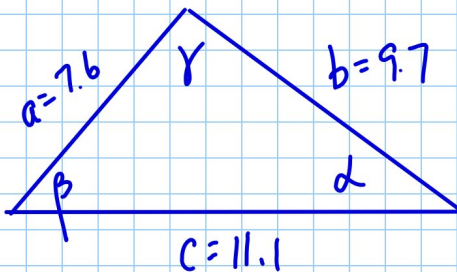
$$\sin \beta = .7343$$

$$\beta = \sin^{-1}.7343 = 47.2^\circ$$

$$\alpha = 180 - 93 - 47.2$$

$$\alpha = 39.8^\circ$$

4)

Biggest angle γ

$$\cos \gamma = \frac{7.6^2 + 9.7^2 - 11.1^2}{2 \cdot 7.6 \cdot 9.7}$$

$$\cos \gamma = .1697$$

$$\gamma = 80.2^\circ$$

$$\frac{\sin \beta}{9.7} = \frac{\sin 78.8^\circ}{11.1}$$

$$\sin \beta = \frac{9.7 \sin 78.8^\circ}{11.1}$$

$$\sin \beta = .8572$$

$$\beta = \sin^{-1}.8572 = 59.0^\circ$$

$$\alpha = \frac{42.2^\circ}{}$$

$$\beta = \frac{59.0^\circ}{}$$

$$\gamma = \frac{78.8^\circ}{}$$

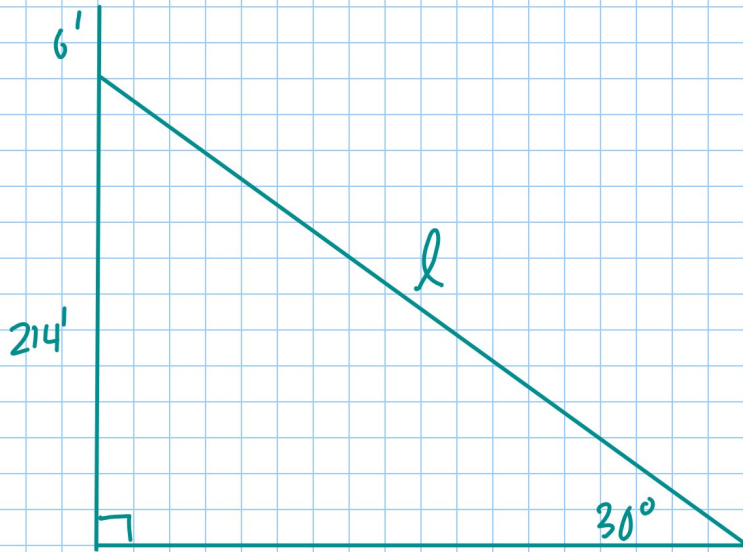
$$\text{Area} = \frac{36.2}{}$$

$$\frac{1}{2}(7.6)(9.7)\sin 78.8^\circ \uparrow$$

$$\alpha = 180 - 78.8 - 59.0$$

$$\alpha = 42.2^\circ$$

5)



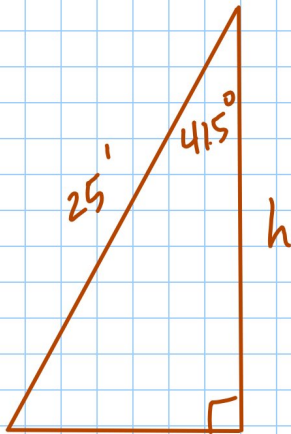
$$\sin 30^\circ = \frac{214}{l}$$

$$l \sin 30^\circ = 214$$

$$l = \frac{214}{\sin 30^\circ}$$

$$l = 428 \text{ ft}$$

7)

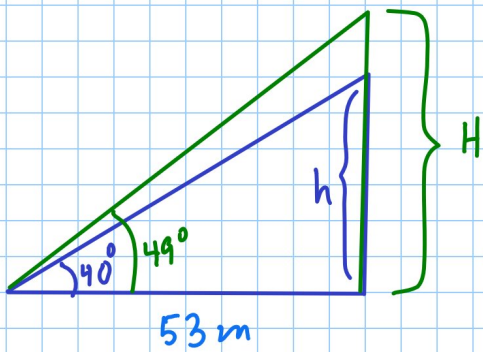


$$\cos 41.5^\circ = \frac{h}{25}$$

$$h = 25 \cos 41.5^\circ$$

$$h = 18.7 \text{ ft}$$

8)



$$\tan 49^\circ = \frac{H}{53}$$

$$H = 53 \tan 49^\circ$$

$$H = 61.0$$

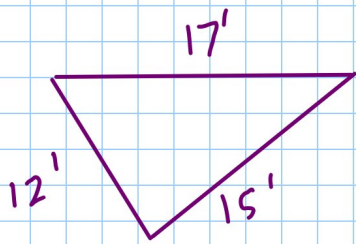
$$\tan 40^\circ = \frac{h}{53}$$

$$h = 53 \tan 40^\circ$$

$$h = 44.5$$

$$\begin{aligned} \text{Radio Tower} &= 61 - 44.5 \\ &= 16.5 \text{ m} \end{aligned}$$

9)



$$s = \frac{1}{2}(12 + 15 + 17) = 22$$

$$A = \sqrt{22(22-12)(22-15)(22-17)}$$

$$A = \sqrt{22 \cdot 10 \cdot 7 \cdot 5}$$

$$A = 87.75 \text{ ft}^2 \cdot \frac{1 \text{ yd}^2}{9 \text{ ft}^2} = 9.75 \text{ yd}^2$$

$$\text{Buy } 10 \text{ yd}^2 \times \$12$$

$$\$120$$