

G4: Check-in Quiz #2

C Level:

Find the measure of the indicated angle to the nearest degree.

1)



30°

2)



60°

3)



10°

4)



30°

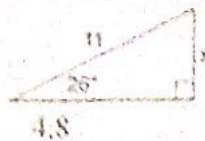
Find the missing side. Round to the nearest tenth.

5)



15.3

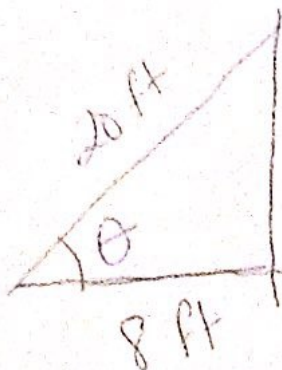
6)



4.8

Draw a diagram and solve the problem.

7) A 20-foot ladder leans against a wall so that the base of the ladder is 8 feet from the base of the building. What angle does the ladder make with the ground?



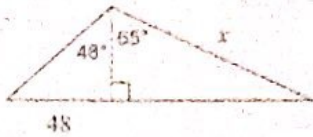
$$\theta = \cos^{-1}\left(\frac{8}{20}\right)$$

$$\theta \approx 66.42^\circ$$

B Level:

Find the length of the side labeled x . Round your answer to the nearest hundredth.

8)



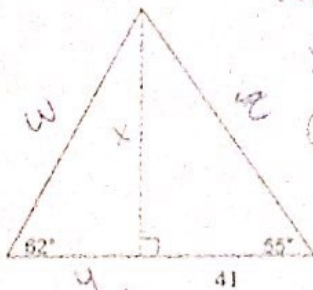
102.2

9)



Find the area and perimeter of each triangle. Round your answers to the nearest hundredth.

10)



$$\tan 55 = \frac{x}{41}$$

$$x \approx 58.55$$

$$\cos 55 = \frac{41}{z}$$

$$z \approx 71.48$$

$$\tan 62 = \frac{41}{y}$$

$$y \approx 31.13$$

$$A = \frac{(41 + 31.13) \cdot 58.55}{2}$$

$$A \approx 2111.61 \text{ in}^2$$

$$A \approx 1115.5$$

$$\sin 62 = \frac{41}{w}$$

$$w \approx 46.32$$

$$P \approx 29.93 \text{ in}$$

11)



$$\tan 37 = \frac{27}{w}$$

$$w \approx 35.88$$

$$\sin 37 = \frac{27}{x}$$

$$x \approx 44.86$$

$$\tan 30 = \frac{27}{z}$$

$$z \approx 62.06$$

$$\sin 30 = \frac{27}{y}$$

$$y \approx 71.66$$

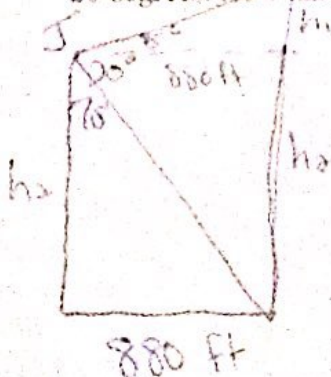
$$A = \frac{(27 + 62.06) \cdot 35.88}{2}$$

$$A \approx 1595.51$$

$$P = 205.58$$

Challenge problem:

12) Joe is standing on top of Marina Towers looking at the Leo Burnett World Headquarters building across the Chicago River. It is 880 feet between buildings. Joe finds the angle of elevation to the top of the Burnett building to be 8 degrees and the angle of depression to the ground level to be 20 degrees. How tall is the Burnett building to the nearest foot?



$$\tan 20 = \frac{880}{h_1}$$

$$h_1 \approx 320.29 \text{ ft}$$

$$\tan 8 = \frac{h_2}{880}$$

$$h_2 \approx 123.68 \text{ ft}$$

$$H = h_1 + h_2$$

$$H = 444 \text{ ft}$$