

Geometry

Name Key

12.1 Trigonometric Ratios HW Day 2

a. Given a right triangle, I can define the sine, cosine, and tangent ratios from an unknown angle.

b. I can use Trigonometric Ratios to solve for unknown sides and angles in a right triangle.

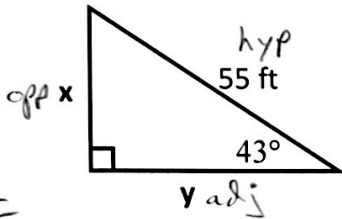
Evaluate the expressions. Round to the nearest hundredth.

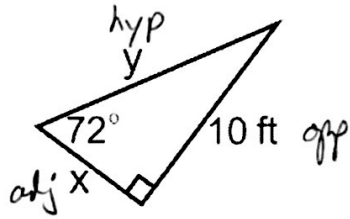
1. $5 + \cos 43.54^\circ$
 $5 + 0.7249$
 5.7249

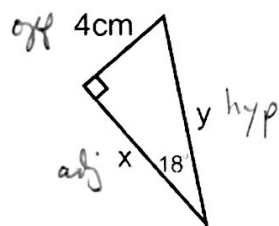
2. $(\sin 32.7^\circ)^2$
 $(0.5402)^2$
 0.2981

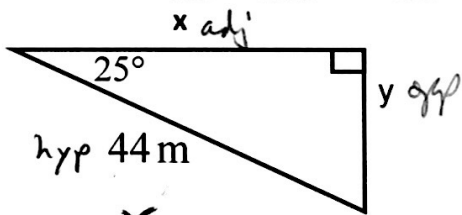
3. $5 \cdot \tan 56.9^\circ$
 $5(1.5340)$
 7.67

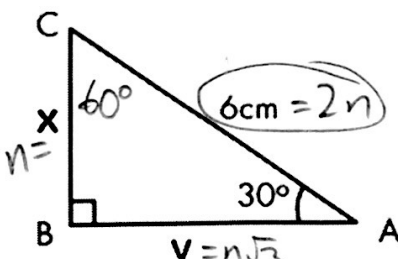
Find the missing side lengths. Round to the nearest hundredth.

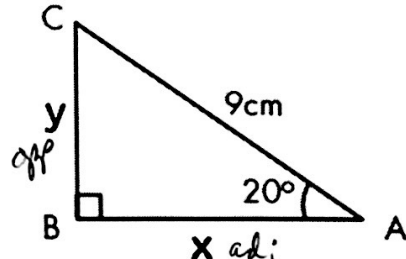
4. 
 $\sin 43 = \frac{x}{55}$
 $\cos 43 = \frac{y}{55}$
 $X = 37.5$
 $Y = 40.2$

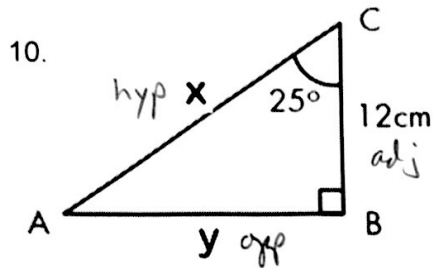
5. 
 $\sin 72 = \frac{10}{y}$
 $\tan 72 = \frac{10}{x}$
 $Y = 10.5$
 $X = 3.2$

6. 
 $\tan 18 = \frac{4}{x}$
 $\sin 18 = \frac{4}{y}$
 $X = 12.3$
 $Y = 12.9$

7. 
 $\cos 25 = \frac{x}{44}$
 $\sin 25 = \frac{y}{44}$
 $X = 39.9$
 $Y = 18.6$

8. SPECIAL RT Δ !!!
 30-60-90

 $6 \text{ cm} = 2n$
 $2n = 6$
 $n = 3$
 $X = 3 \text{ cm}$
 $Y = 3\sqrt{3} \text{ cm}$

9. 
 $\sin 20 = \frac{y}{9}$
 $\cos 20 = \frac{x}{9}$
 $Y = 3.1$
 $X = 8.5$

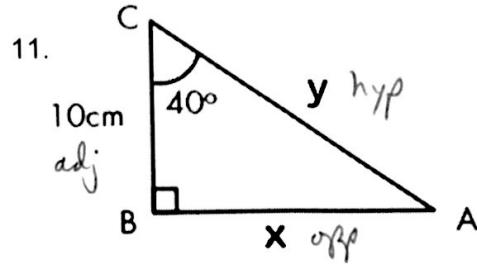


$$\tan 25^\circ = \frac{y}{12}$$

$$\cos 25^\circ = \frac{12}{x}$$

$$y = 5.6$$

$$x = 13.2$$



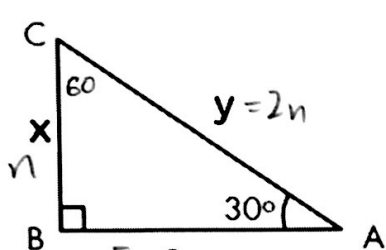
$$\tan 40^\circ = \frac{x}{10}$$

$$\cos 40^\circ = \frac{10}{y}$$

$$x = 8.4$$

$$y = 13.1$$

SPECIAL
RT Δ !!!
30-60-90



$$n\sqrt{3} = 2$$

$$n = \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

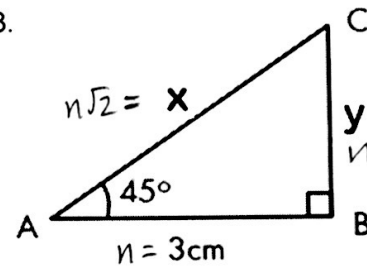
$$n = \frac{2\sqrt{3}}{3}$$

$$n\sqrt{3} = 2 \text{ cm}$$

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

$$y = \frac{4\sqrt{3}}{3}$$

13.



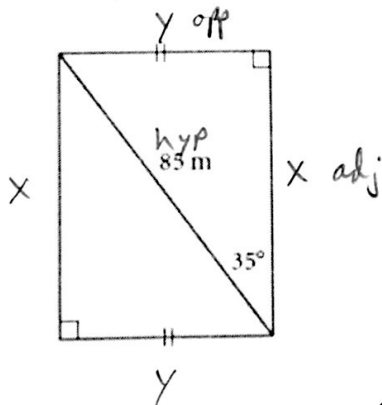
SPECIAL
RT Δ !!!
45-45-90

$$n = 3$$

$$y = 3 \text{ cm}$$

$$x = 3\sqrt{2} \text{ cm}$$

14. Find the perimeter.



$$\cos 35^\circ = \frac{x}{85}$$

$$\sin 35^\circ = \frac{y}{85}$$

$$x = 69.6$$

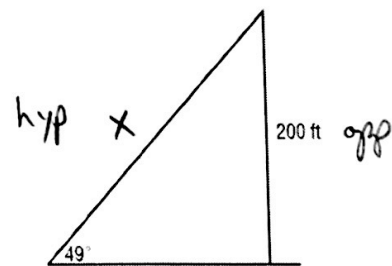
$$y = 48.8$$

$$2x = 139.2$$

$$2y = 97.6$$

$$236.8 \text{ m}$$

15. RADIO TOWERS Kay is standing near a 200-foot-high radio tower.



Use the information in the figure to determine how far Kay is from the top of the tower.

$$\sin 49^\circ = \frac{200}{x}$$

$$x = 265.0 \text{ ft}$$