1. a = 10 A = 52°

b = 9.76 B = 50.28°

c = 12.4 C = 77.72°

$a' = 10$ $\measuredangle A' = 52^{\circ}$

$b' = 5.51$ $\measuredangle B' = 25.72^{\circ}$

$c' = 12.4$ $\measuredangle C' = 102.28^{\circ}$

Supp

$$\frac{\sin 52^{\circ}}{10} = \frac{\sin 25.72}{b'}$$

$$\frac{b' \cdot \sin 52}{\sin 52} = \frac{10 \cdot \sin 25.72}{\sin 52}$$

$$= \frac{\sin C}{12.4}$$

$$12.4 \cdot \sin 52^{\circ}$$

$$\frac{12.4 \cdot \sin 52}{10}$$

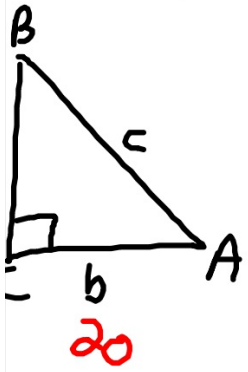
$$\frac{\sin 50.28^{\circ}}{b}$$

$$= \frac{10 \cdot \sin 50.28}{\sin 52}$$

2. a = 15 A = 36.87°

b = 20 B = 53.13°

c = 25 C = 90°



$15^2 + 20^2 = c^2$

$625 = c^2$

$25 = c$

$\tan A = \frac{15}{20}$

$\measuredangle A = \tan^{-1}\left(\frac{15}{20}\right)$

3. a = 20 A = 11.27°

b = 40 B = 23°

c = 57.65 C = 145.73°

$$\frac{\sin 23^\circ}{40} = \frac{\sin A}{20}$$

$$\frac{\cdot \sin 23}{40} = \frac{40 \cdot \sin A}{40}$$

$\measuredangle A =$

$$\frac{\sin 23^\circ}{40} = \frac{\sin 145.73^\circ}{c}$$

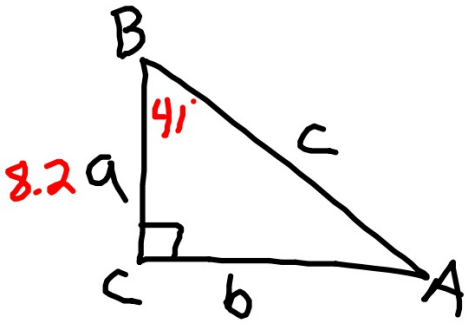
$$\frac{c \cdot \cancel{\sin 23^\circ}}{\cancel{\sin 23^\circ}} = \frac{40 \cdot \sin 145.73^\circ}{\sin 23^\circ}$$

$c =$

4. a = 8.2 A = 49°

b = 7.13 B = 41°

c = 10.87 C = 90°



$\tan 41° = \frac{b}{8.2}$

$b = 8.2 \cdot \tan 41°$

$\cos 41 = \frac{8.2}{c}$

$c = \frac{8.2}{\cos 41}$

5. a = 12.3 A = 77.3°

b = 11.35 B = 64.2°

c = 7.85 C = 38.5°

$$\frac{\sin 77.3}{12.3} = \frac{\sin 64.2}{b}$$

$$b \cdot \frac{\cancel{\sin 77.3}}{\cancel{\sin 77.3}} = \frac{12.3 \cdot \sin 64.2}{\sin 77.3}$$

$$\frac{\sin 77.3}{12.3} = \frac{\sin 38.5}{c}$$

$$c \cdot \frac{\cancel{\sin 77.3}}{\cancel{\sin 77.3}} = \frac{12.3 \cdot \sin 38.5}{\sin 77.3}$$

6. a = 9.48 A = 43.7°

b = 5.6 B = 24.09°

c = 12.7 C = 112.21°

$5.6^2 + 12.7^2 - 2 \cdot 5.6 \cdot 12.7 \cdot \cos 43.7$

$192.65 - 142.24 \cos 43.7$

89.81

9.48

$\frac{\sin 43.7^{\circ}}{9.48} = \frac{\sin B}{5.6}$

$\frac{5.6 \cdot \sin 43.7}{9.48} = \sin B$

7. a = 5.6 A = 29.73°

b = 4.9 B = 25.72°

c = 9.3 C= 124.55°

$9.3^2 = 5.6^2 + 4.9^2 - 2 \cdot 5.6 \cdot 4.9 \cdot \cos C$

$86.49 = 31.36 + 24.01 - 54.88 \cos C$

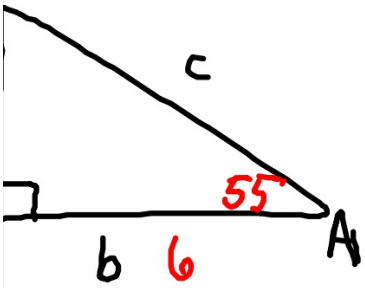
$31.12 = -54.88 \cos C$

$\measuredangle C = 124.55°$

$\frac{\sin 124.55}{9.3} = \frac{\sin A}{5.6}$

$\frac{5.6 \cdot \sin 124.55}{9.3} = \frac{\cancel{9.3} \cdot s}{\cancel{9.3}}$

A = 55° b= 6



a = 8.57

b = 6

c = 10.46

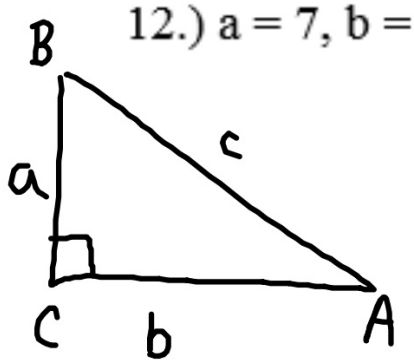
$\frac{a}{6}$

$\tan 55$

$\cos 55 = \frac{6}{c}$

$c = \frac{6}{\cos 55}$

12.) a = 7, b = 12



$7^2 + 12^2$

$193 =$

$c = \sqrt{}$

$\measuredangle A = 30.26°$ a = 7

$\measuredangle B = 59.74°$ b = 12

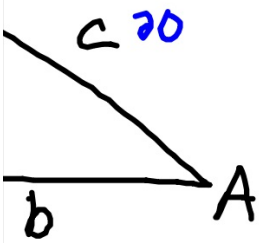
$\measuredangle C = 90°$ $c = \sqrt{193}$

$\tan A = 7/12$

$A = \tan^{-1}(7/12)$

$A = 30.26°$

) B = 13°, c= 20



a = 19.49

b = 4.5

c = 20

$= \frac{a}{20}$

$20 \cdot \cos 13°$

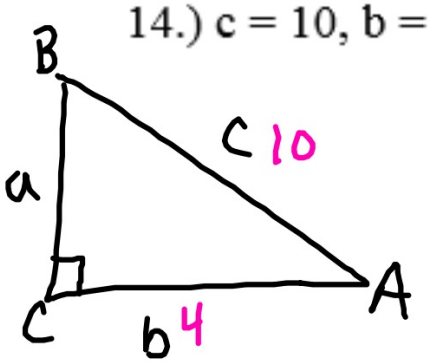
19.49

$\sin 13° = \frac{b}{20}$

$b = 20 \cdot \sin 13°$

b = 4.50

14.) c = 10, b = 4



$a^2 + 4^2 =$

$a^2 = 8$

$a = \sqrt{8}$

$\measuredangle A = 66.42°$ $a = 2\sqrt{21}$

$\measuredangle B = 23.58°$ $b = 4$

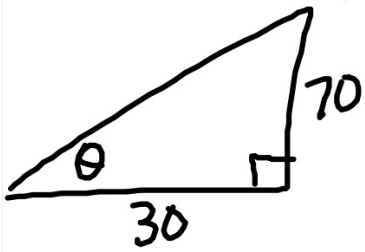
$\measuredangle C = 90°$ $c = 10$

$\cos A = \frac{4}{10}$

$A = \cos^{-1}(4/10)$

$A = 66.42°$

The height of a radio transmission tower is 70 meters., and is casts a shadow of h 30 meters. Find the angle of elevation to the sun.

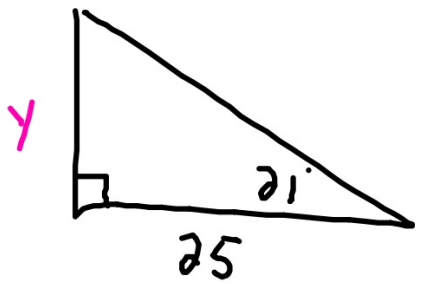


$\tan\theta = 70/30$

$\theta = \tan^{-1}(70/30)$

$\theta = 66.8^\circ$

Your football has landed on the edge of the roof of your school building. When you
25 feet from the base of the building, the angle of elevation of your football is 21°.
high off the ground is your football?



$\tan 21° = y/25$

$y = 25 \cdot \tan 21$

$\boxed{y = 9.60}$