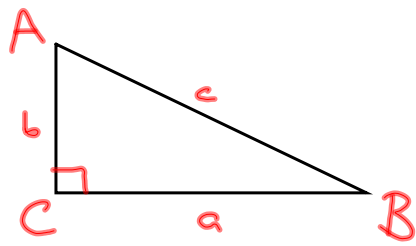


7.1 Right Triangle Trig.

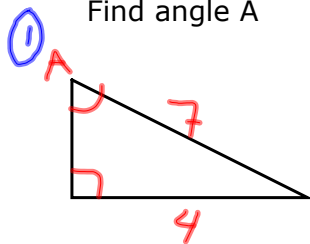


Pythagorean Thm $a^2 + b^2 = c^2$

$$\angle A + \angle B + \angle C = 180^\circ$$

$$\angle A + \angle B = 90$$

① Find angle A



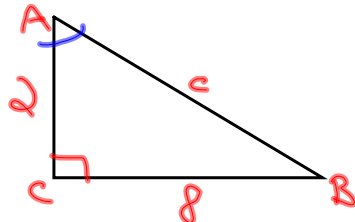
$$\sin A = \frac{4}{7}$$

$$A = \sin^{-1}\left(\frac{4}{7}\right)$$

arcsin

$$A \approx 34.85^\circ$$

2) Solve the \triangle



$$c = 2\sqrt{17}$$

$$\angle A = 75.96^\circ$$

$$\angle B = 14.04^\circ$$

$$\tan A = \frac{8}{2}$$

$$A = \tan^{-1}(4)$$

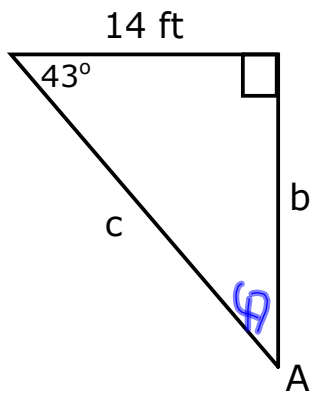
$$A \approx 75.96^\circ$$

$$2^2 + 8^2 = c^2$$

$$68 = c^2$$

$$\sqrt{68} = c$$

3) Solve the triangle:



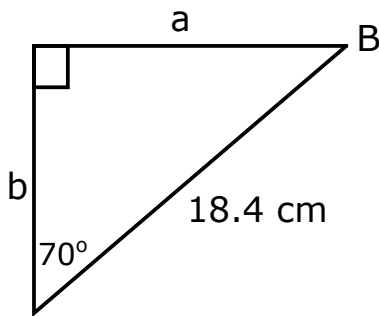
$$\tan 43 = \frac{b}{14}$$

$$b = 14 \cdot \tan 43 = 13.06$$

$$14^2 + 13.06^2 = c^2 = 19.15$$

☺

4) Solve the triangle:



$$\angle B = 20^\circ$$

$$\sin 70 = \frac{a}{18.4}$$

$$18.4 \sin 70 = a$$

$$a = 17.29 \text{ cm}$$

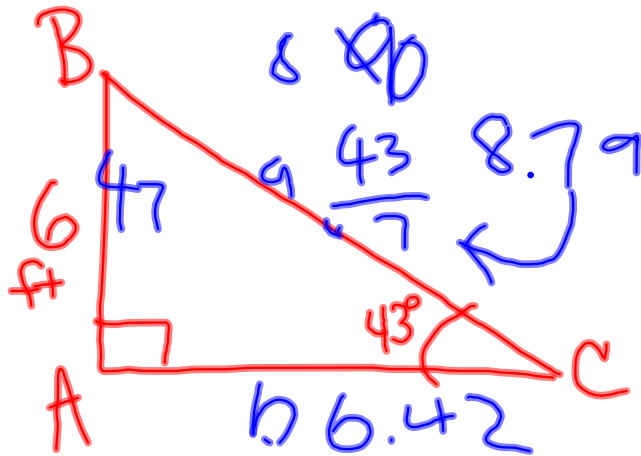
$$\cos 70 = \frac{b}{18.4}$$

$$b = 18.4 \cos 70 \approx 6.29 \text{ cm}$$

P475

2-24e

42, 44, 46, 49-53



Solve $\triangle ABC$

$$\sin 43 = \frac{6}{a}$$

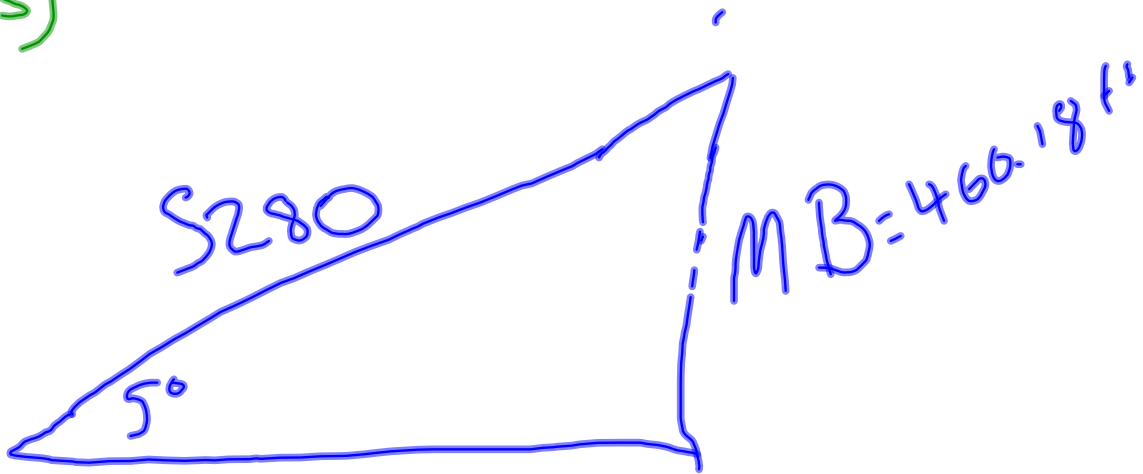
$$\frac{6}{\sin 43}$$

$$a = 8.79$$

$$36 + b^2 = 77.26$$

$$\frac{36}{14.26}$$

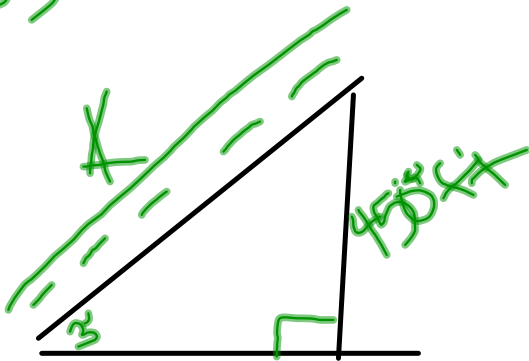
55) P477



$$\sin 5 = \frac{CB}{5280}$$

$$5280 \sin(5) = 460.1$$

57)

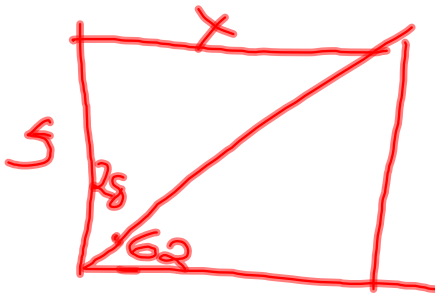


$$\sin 3^\circ = \frac{450}{K}$$

$$\Rightarrow K = \frac{450}{\sin 3^\circ}$$

59)

$$2.66 \cdot 12 = 31.92$$

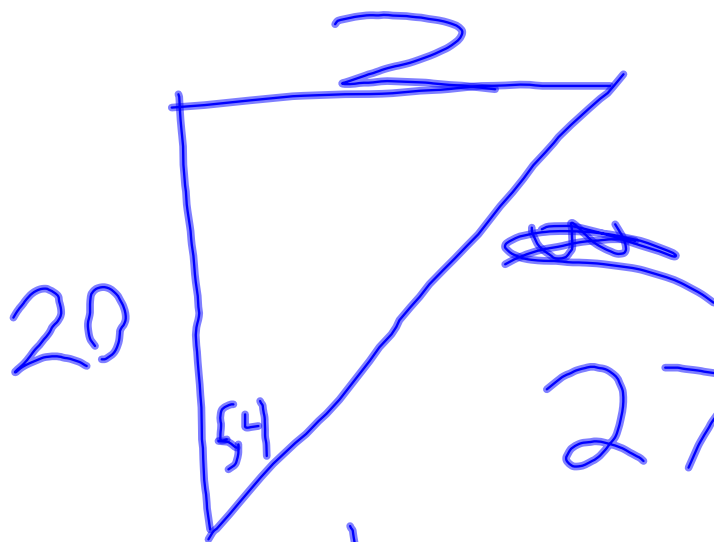


$$x = 2.66$$

$$\tan 28 = \frac{x}{5} \quad 5 \tan 28 = x$$

no

61)

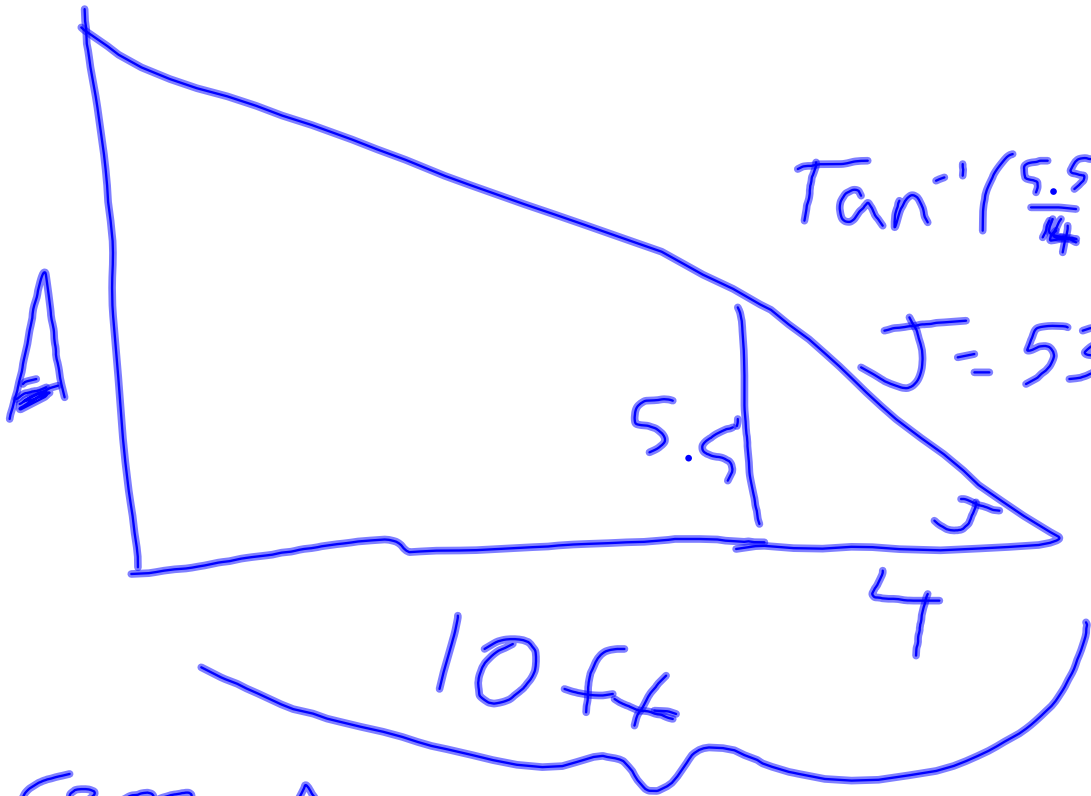


$$20 \tan^{54} = 2$$

$$27.53 = 2$$

$$\tan 54 = \frac{2}{20}$$

63)



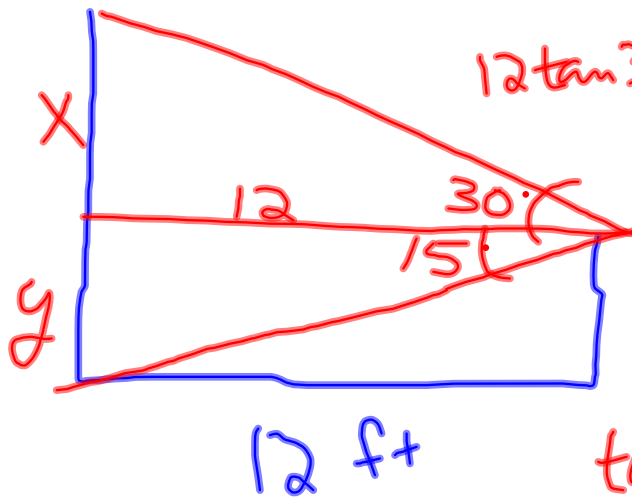
$$\tan^{-1}\left(\frac{5.5}{14}\right) =$$

$$J = 53.9$$

$$\tan 53.97 = \frac{A}{14}$$
$$14(\tan 53.97) = A$$

$$A = 19.25 \text{ ft.}$$

67)



$$\tan 30 = \frac{x}{12}$$

$$12 \tan 30 = x$$

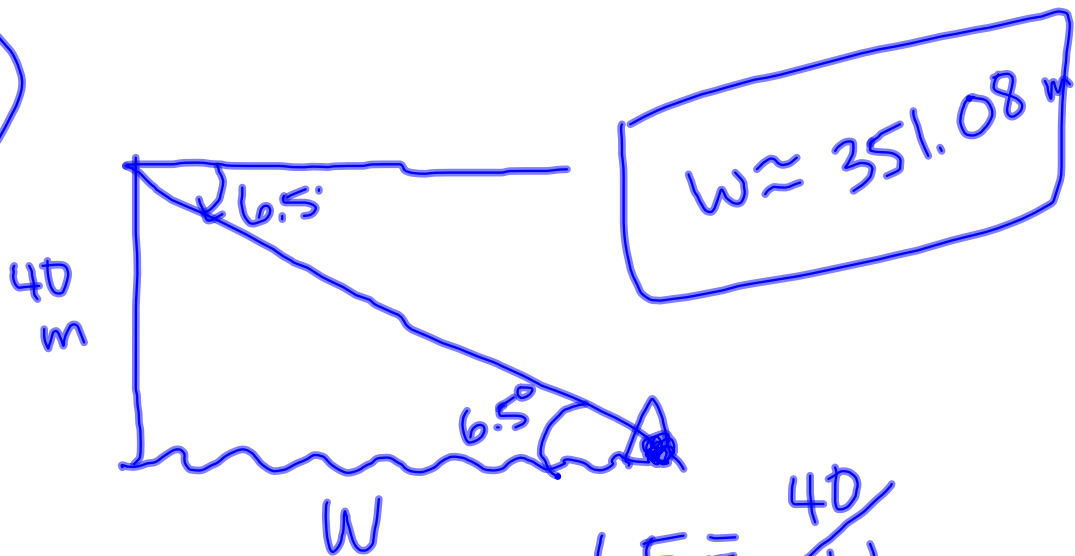
$$x = 6.93$$

$$\tan 15 = \frac{y}{12}$$

$$3.22 = y$$

10.15 ft

(65)

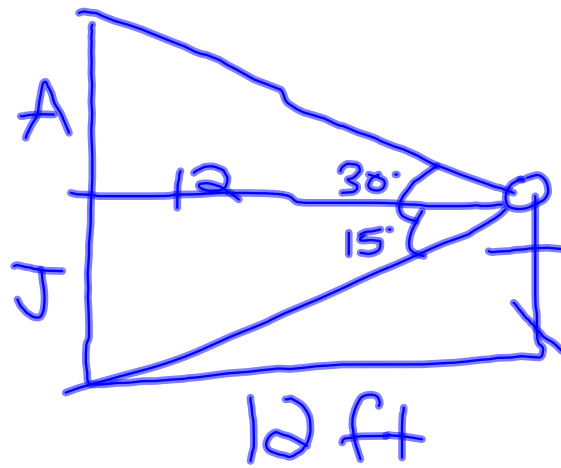


$$\tan 6.5 = \frac{40}{W}$$

$$W \tan 6.5 = 40$$

$$W = \frac{40}{\tan 6.5}$$

67)



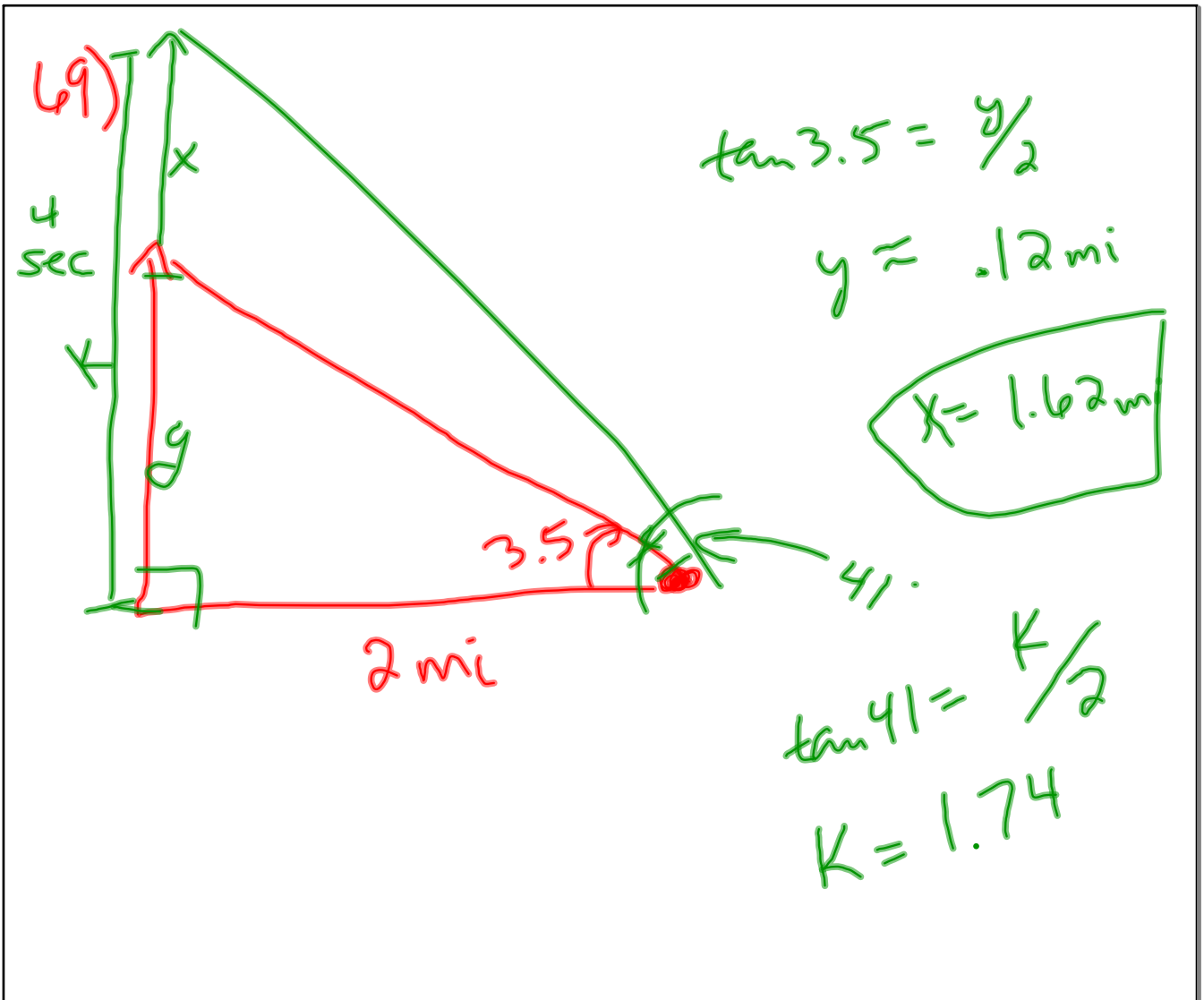
$$\tan 30^\circ = \frac{A}{12}$$

$$\tan 15^\circ = \frac{J}{12}$$

$$A \approx 6.93$$

$$J \approx 3.22$$

$$+ \quad \rangle \quad 10.15 \text{ ft}$$



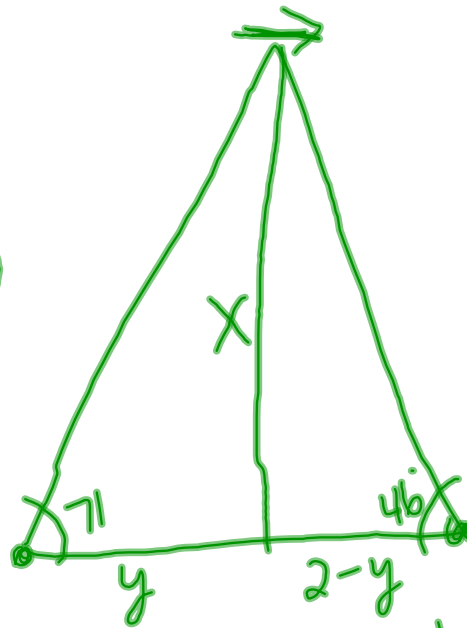
p477

56-68e

Diagram
Write Eqn.

Solve

(64)



$$\tan 71 = \frac{x}{y}, \quad \tan 46 = \frac{x}{2-y}$$

$$y \tan 71 = x, \quad (2-y) \tan 46 = x$$

$$y \tan 71 = (2-y) \tan 46$$

$$y \tan 71 = 2 \tan 46 - y \tan 46$$

$$y \tan 71 + y \tan 46 = 2 \tan 46$$

$$y (\tan 71 + \tan 46) = 2 \tan 46$$

$$y = \frac{2 \tan 46}{(\tan 71 + \tan 46)} \approx .526 \text{ mi}$$