2-24-20 1st Trig

① Solve

$10 + 3 \cdot \tan\theta = 15$

$-10 \qquad -10$

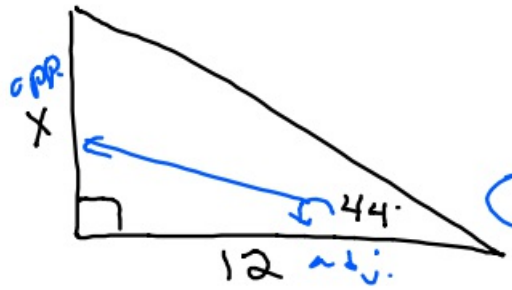
$3 \cdot \tan\theta = 5$

$\frac{3 \cdot \tan\theta}{3} = \frac{5}{3}$

$\tan^{-1}\tan\theta = \tan^{-1}\frac{5}{3}$

$\theta \approx 59.0°$

②



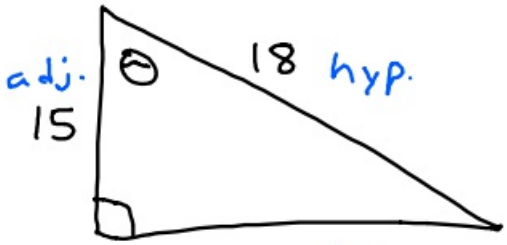
SOH
CAH
TOA

$\frac{\tan 44°}{1} = \frac{X}{12}$

$X = 12 \cdot \tan 44°$

$X \approx 11.6$

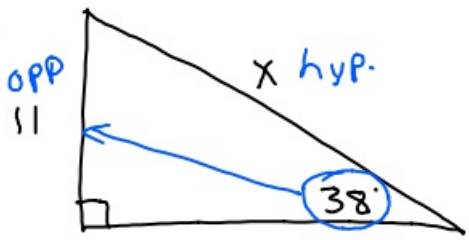
③



$\cos^{-1}\cos\theta = \cos^{-1}\frac{15}{18}$

$\theta \approx 33.6°$

(4)

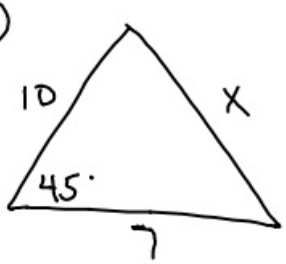


$$\frac{\sin 38^\circ}{1} = \frac{11}{x}$$

$$\frac{x \cdot \sin 38^\circ}{\sin 38^\circ} = \frac{11}{\sin 38^\circ}$$

$$x \approx 17.9$$

(5)



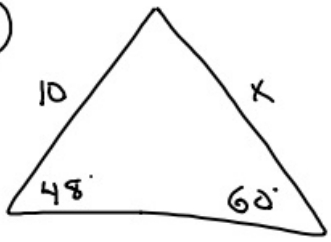
$$c^2 = a^2 + b^2 - 2 \cdot ab \cdot \cos\theta$$

$$x^2 = 7^2 + 10^2 - 2 \cdot 7 \cdot 10 \cdot \cos 45^\circ$$

$$\sqrt{x^2} \approx \sqrt{50...}$$

$$x \approx 7.1$$

(6)

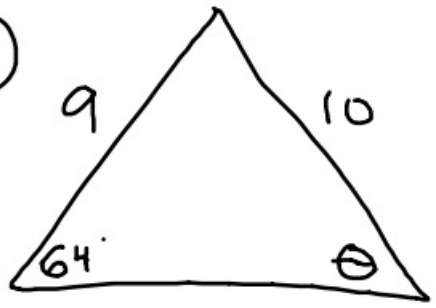


$$\frac{\sin 48^\circ}{x} = \frac{\sin 60}{10}$$

$$\frac{x \cdot \sin 60}{\sin 60} = \frac{10 \cdot \sin 48^\circ}{\sin 60^\circ}$$

$$x \approx 8.6$$

(7)



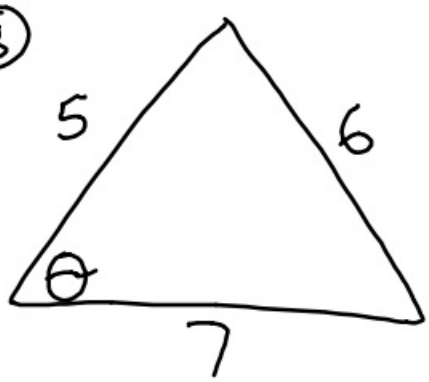
$$\frac{\sin 64^\circ}{10} = \frac{\sin\theta}{9}$$

$$\frac{10 \cdot \sin\theta}{10} = \frac{9 \cdot \sin 64}{10}$$

$$\sin^{-1}\sin\theta = \sin^{-1}.8089\ldots$$

$$\theta \approx 54.0^\circ$$

(8)



$$c^2 = a^2 + b^2 - 2ab\cdot\cos\theta$$

$$6^2 = 7^2 + 5^2 - 2\cdot 7\cdot 5\cdot\cos\theta$$

$$36 = 49 + 25 - 70\cdot\cos\theta$$

$$36 = 74 - 70\cdot\cos\theta$$

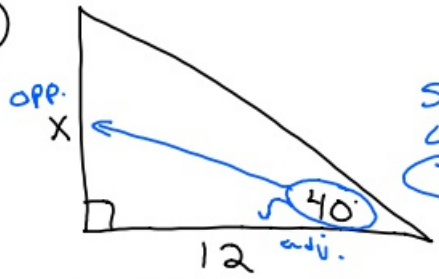
$$-74 \quad -74$$

$$\frac{-38}{-70} = \frac{-70\cdot\cos\theta}{-70}$$

$$\cos^{-1}\cos\theta = \cos^{-1}\frac{38}{70}$$

$$\theta \approx 57.1^\circ$$

2-24-20 3rd Trig

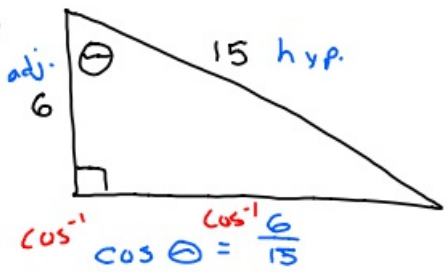
① 

SOH
CAH
TOA

$\frac{\tan 40^\circ}{1} = \frac{X}{12}$

$X = 12 \cdot \tan 40^\circ$

$X \approx 10.1$

② 

$\cos^{-1}$ $\cos^{-1}\frac{6}{15}$

$\cos\theta = \frac{6}{15}$

$\theta \approx 66.4^\circ$

③ Solve: $10 + 4 \cdot \tan\theta = 18$

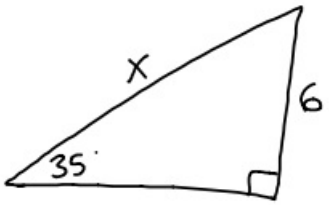
$-10 \quad -10$

$\frac{4 \cdot \tan\theta}{4} = \frac{8}{4}$

$\tan^{-1}$ $\tan^{-1}$

$\tan\theta = 2$

$\theta \approx 63.4^\circ$

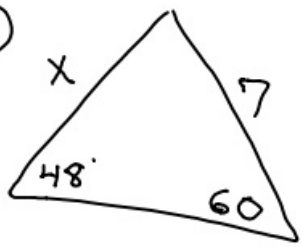
④ 

$\frac{\sin 35^\circ}{1} = \frac{6}{X}$

$\frac{X \cdot \sin 35}{\sin 35} = \frac{6}{\sin 35^\circ}$

$X \approx 10.5$

(5)

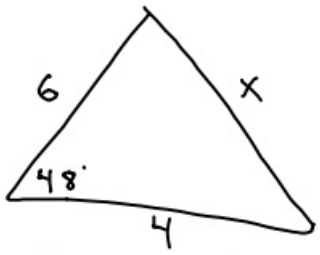


$$\frac{\sin 60}{X} = \frac{\sin 48}{7}$$

$$\frac{X \cdot \sin 48}{\sin 48} = \frac{7 \cdot \sin 60}{\sin 48}$$

$$X \approx 8.2$$

(6)



$$c^2 = a^2 + b^2 - 2 \cdot a \cdot b \cdot \cos\theta$$

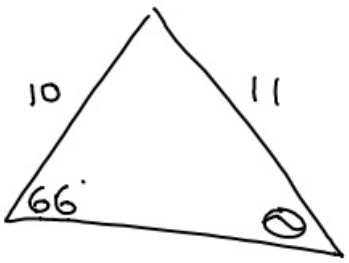
$$X^2 = 4^2 + 6^2 - 2 \cdot 4 \cdot 6 \cdot \cos 48$$

$$X^2 = 16 + 36 - 48 \cdot \cos 48°$$

$$\sqrt{X^2} \approx \sqrt{19.9\ldots}$$

$$X \approx 4.5$$

(7)



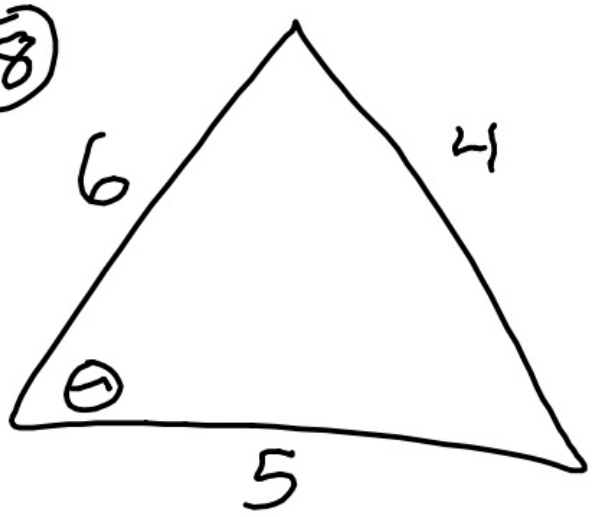
$$\frac{\sin 66}{11} = \frac{\sin\theta}{10}$$

$$\frac{N \cdot \sin\theta}{N} = \frac{10 \cdot \sin 66}{11}$$

$$\sin^{-1} \sin\theta \approx \sin^{-1} .83\ldots$$

$$\theta \approx 56.1°$$

(8)



$c^2 = a^2 + b^2 - 2ab\cos\theta$

$4^2 = 5^2 + 6^2 - 2 \cdot 5 \cdot 6 \cdot \cos\theta$

$16 = 25 + 36 - 60 \cdot \cos\theta$

$16 = 61 - 60 \cdot \cos\theta$

$-61 \quad -61$

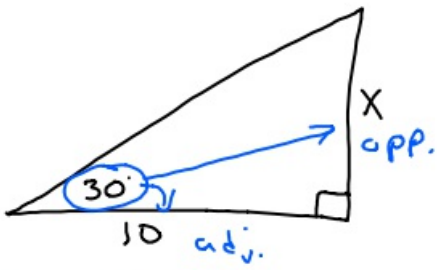
$\frac{-45}{-60} = \frac{-60 \cdot \cos\theta}{-60}$

$\cos^{-1}\cos\theta = \cos^{-1}\frac{45}{60}$

$\theta \approx 41.4^\circ$

2-24-20 4th Trig

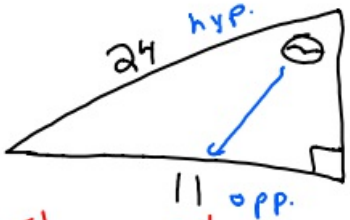
SOH
CAH
TOA

① 

$\frac{\tan 30^\circ}{1} = \frac{X}{10}$

$X = 10 \cdot \tan 30^\circ$

$X \approx 5.8$

② 

$\sin^{-1}$ $\sin\Theta = \frac{11}{24}$ $\sin^{-1}$

$\Theta \approx 27.3^\circ$

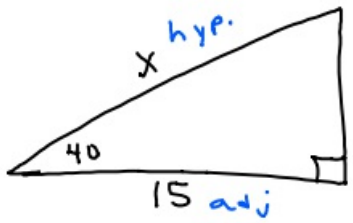
③ $4 + 2 \cdot \tan\Theta = 12$

$-4 \qquad -4$

$\frac{2 \cdot \tan\Theta}{2} = \frac{8}{2}$

$\tan^{-1}$ $\tan\Theta = 4$ $\tan^{-1}$

$\Theta \approx 76.0^\circ$

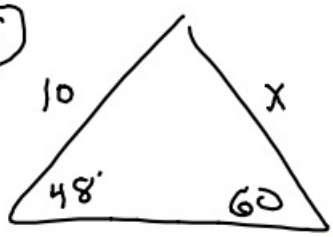
④ 

$\frac{\cos 40^\circ}{1} = \frac{15}{X}$

$\frac{X \cdot \cos 40^\circ}{\cos 40^\circ} = \frac{15}{\cos 40^\circ}$

$X \approx 19.6$

(5)

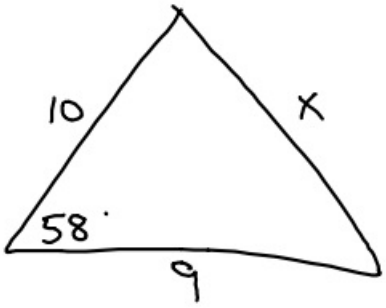


$$\frac{\sin 48}{X} = \frac{\sin 60}{10}$$

$$\frac{X \cdot \sin 60}{\sin 60} = \frac{10 \cdot \sin 48^\circ}{\sin 60}$$

$$X \approx 8.6$$

(6)



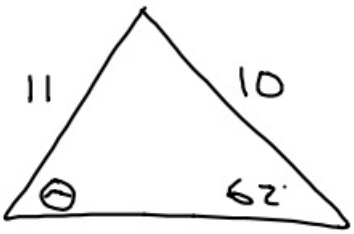
$$c^2 = a^2 + b^2 - 2ab \cdot \cos\theta$$

$$X^2 = 9^2 + 10^2 - 2 \cdot 9 \cdot 10 \cdot \cos 58^\circ$$

$$\sqrt{X^2} \approx \sqrt{85.6\ldots}$$

$$X \approx 9.3$$

(7)



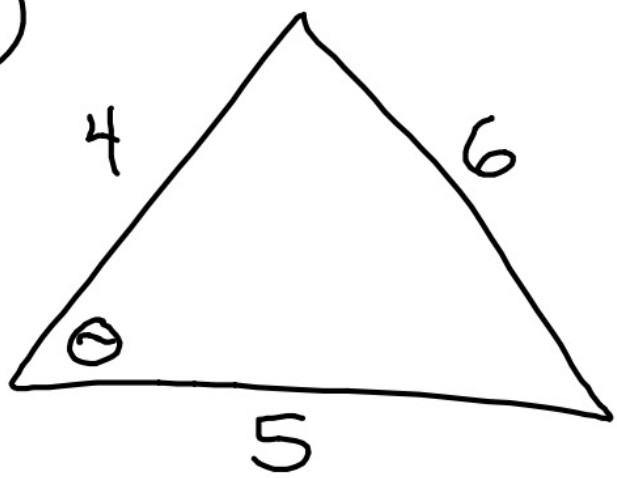
$$\frac{\sin\theta}{10} = \frac{\sin 62^\circ}{11}$$

$$\frac{11 \cdot \sin\theta}{11} = \frac{10 \cdot \sin 62^\circ}{11}$$

$$\sin^{-1}\sin\theta \approx \sin^{-1}.80\ldots$$

$$\theta \approx 53.4^\circ$$

(8)



$$c^2 = a^2 + b^2 - 2 \cdot a \cdot b \cdot \cos\theta$$

$$6^2 = 5^2 + 4^2 - 2 \cdot 5 \cdot 4 \cdot \cos\theta$$

$$36 = 25 + 16 - 40 \cdot \cos\theta$$

$$36 = 41 - 40 \cdot \cos\theta$$

$$-41 \quad -41$$

$$\frac{-5}{-40} = \frac{-40 \cdot \cos\theta}{-40}$$

$$\cos^{-1}\frac{5}{40} = \cos^{-1}\cos\theta$$

$$\theta \approx 82.8^\circ$$