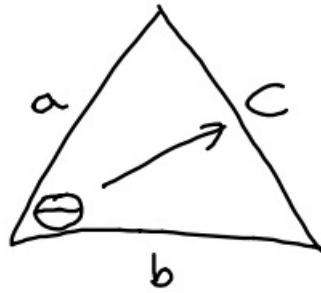
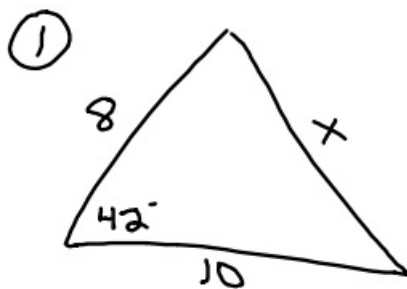


2-18-20

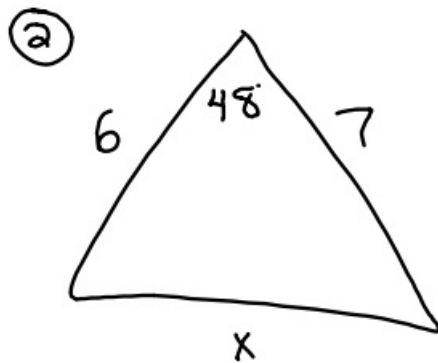


Law of Cosines

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



$$x^2 = 10^2 + 8^2 - 2 \cdot 10 \cdot 8 \cdot \cos 42^\circ$$
$$\sqrt{x^2} = \sqrt{45} \dots \dots$$
$$x \approx 6.7$$



$$x^2 = 6^2 + 7^2 - 2 \cdot 6 \cdot 7 \cdot \cos 48^\circ$$
$$\sqrt{x^2} \approx \sqrt{28.793} \dots \dots$$
$$x \approx 5.4$$

$$10 = 8 + 4 - 2x$$

$$10 = 12 - 2x$$

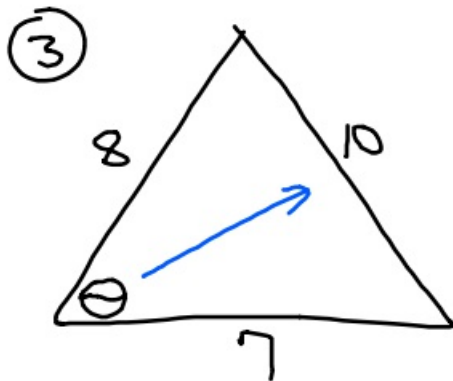
$$\times 10 = 10x$$

$$10 = 8 + 4 - 2 \cdot \square$$

$$10 = 12 - 2 \cdot \square$$

$$\begin{array}{r} -12 \\ -12 \\ \hline \end{array}$$

$$-2 = -2 \cdot \square$$



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

$$10^2 = 7^2 + 8^2 - 2 \cdot 7 \cdot 8 \cdot \cos \theta$$

$$100 = 49 + 64 - 112 \cdot \cos \theta$$

$$100 = 113 - 112 \cdot \cos \theta$$

$$113 \quad -113$$

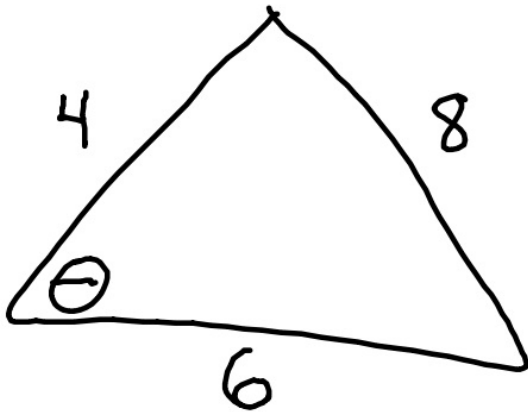
$$\begin{array}{r} -113 \\ -112 \\ \hline \end{array} = \begin{array}{r} -112 \cdot \cos \theta \\ -112 \\ \hline \end{array}$$

$$\frac{-113}{-112} = \frac{-112 \cdot \cos \theta}{-112}$$

$$\cos^{-1} \frac{113}{112} = \cos^{-1} \cos \theta$$

$$83.3 \approx \theta$$

4



$$8^2 = 6^2 + 4^2 - 2 \cdot 6 \cdot 4 \cdot \cos \theta$$

$$64 = 36 + 16 - 48 \cdot \cos \theta$$

$$64 = 52 - 48 \cdot \cos \theta$$

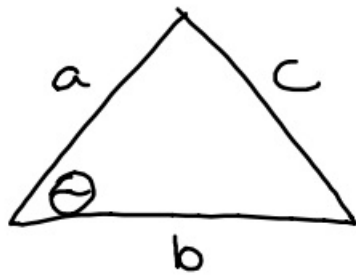
$$\begin{array}{r} -52 \\ -52 \end{array}$$

$$\begin{array}{r} \frac{12}{-48} = \frac{-48 \cdot \cos \theta}{-48} \end{array}$$

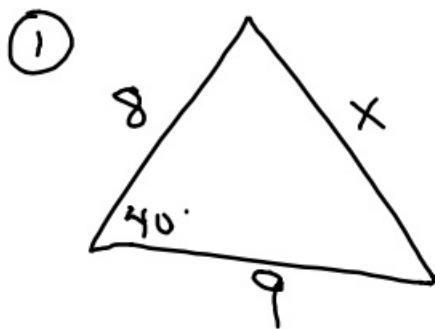
$$\cos^{-1}\left(\frac{12}{-48}\right) = \cos^{-1} \cos \theta$$

$$\theta \approx 104.5^\circ$$

2-18-20 3rd Trig

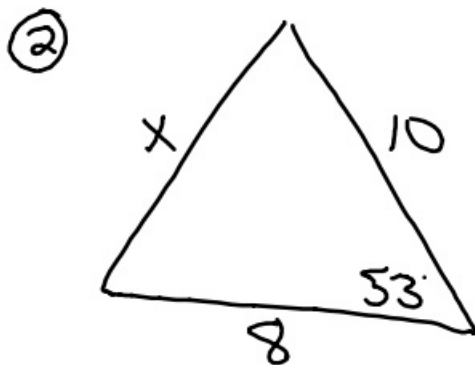


$$c^2 = a^2 + b^2 - 2ab \cdot \cos \theta$$



$$x^2 = 9^2 + 8^2 - 2 \cdot 9 \cdot 8 \cdot \cos 40^\circ$$
$$\sqrt{x^2} \approx \sqrt{34.6} \dots \dots$$

$$x \approx 5.8$$



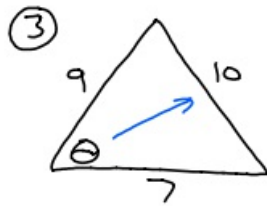
$$x^2 = 8^2 + 10^2 - 2 \cdot 8 \cdot 10 \cdot \cos 53^\circ$$
$$\sqrt{x^2} \approx \sqrt{67.7} \dots \dots$$

$$x \approx 8.2$$

$$6 = 4 + 5 - 2 \cdot \square$$

$$6 = 9 - 2 \cdot \square$$

$$\begin{array}{r} -9 \quad -9 \\ -3 = -2 \cdot \square \\ \hline -2 \quad -2 \end{array}$$



$$10^2 = 9^2 + 7^2 - 2 \cdot 9 \cdot 7 \cdot \cos \theta$$

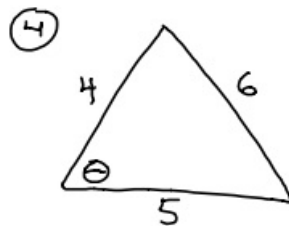
$$100 = 81 + 49 - 126 \cdot \cos \theta$$

$$100 = 130 - 126 \cdot \cos \theta$$

$$\begin{array}{r} -130 \quad -130 \\ \hline -30 = -126 \cdot \cos \theta \\ \hline -126 \quad -126 \end{array}$$

$$\cos^{-1} \frac{30}{126} = \cos^{-1} \cos \theta$$

$$\theta \approx 76.2^\circ$$



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

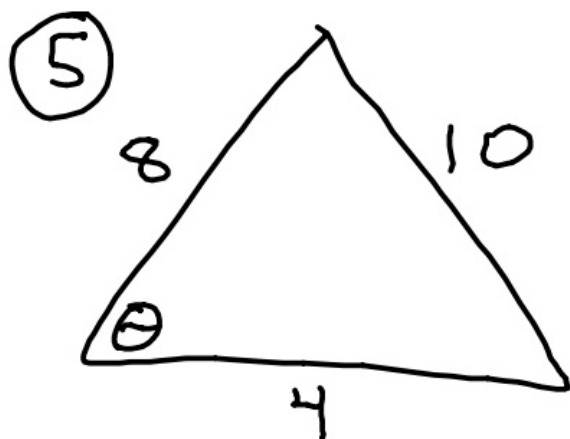
$$36 = 25 + 16 - 40 \cdot \cos \theta$$

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

$$\begin{array}{r} -41 \quad -41 \\ \hline -5 = -40 \cdot \cos \theta \\ \hline -40 \quad -40 \end{array}$$

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

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



$$10^2 = 8^2 + 4^2 - 2 \cdot 8 \cdot 4 \cdot \cos \theta$$

$$100 = 64 + 16 - 64 \cdot \cos \theta$$

$$100 = 80 - 64 \cdot \cos \theta$$

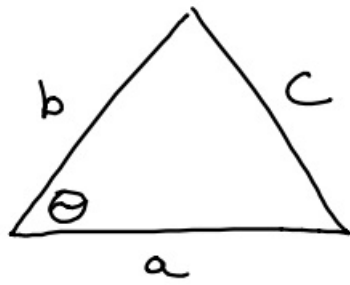
$$\begin{array}{r} -80 \\ -80 \end{array}$$

$$\begin{array}{r} 20 = -64 \cdot \cos \theta \\ \hline -64 \quad \quad -64 \end{array}$$

$$\cos^{-1} \frac{20}{-64} = \cos^{-1} \cos \theta$$

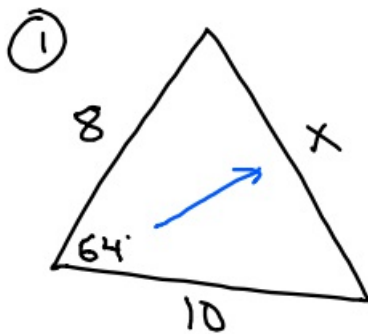
$$\theta \approx 108.2^\circ$$

2-18-20 4th Trig



Law of Cosines

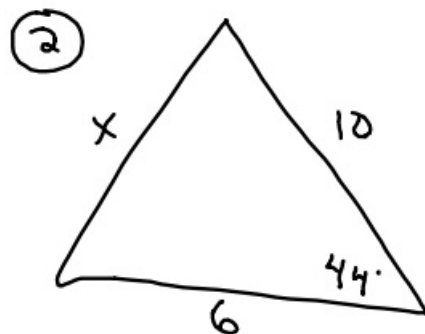
$$c^2 = a^2 + b^2 - 2ab \cdot \cos \theta$$



$$x^2 = 10^2 + 8^2 - 2 \cdot 10 \cdot 8 \cdot \cos 64^\circ$$

$$\sqrt{x^2} \approx \sqrt{93.86 \dots}$$

$$x \approx 9.7$$



$$x^2 = 10^2 + 6^2 - 2 \cdot 10 \cdot 6 \cdot \cos 44^\circ$$

$$\sqrt{x^2} \approx \sqrt{49.6 \dots}$$

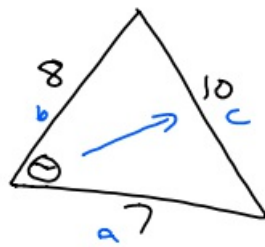
$$x \approx 7.0$$

$$10 = 8 + 4 - 2 \cdot \square$$

$$10 = 12 - 2 \cdot \square$$

$$\times 10 = 10 \cdot \square$$

③



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

$$10^2 = 7^2 + 8^2 - 2 \cdot 7 \cdot 8 \cdot \cos \theta$$

$$100 = 49 + 64 - 112 \cdot \cos \theta$$

$$100 = 113 - 112 \cdot \cos \theta$$

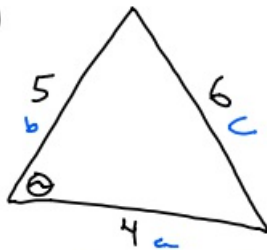
$$\begin{array}{r} -113 \\ -113 \end{array}$$

$$\frac{-13}{-112} = \frac{-112 \cdot \cos \theta}{-112}$$

$$\cos^{-1} \frac{13}{112} = \cos^{-1} \cos \theta$$

$$\theta \approx 83.3^\circ$$

④



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

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

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

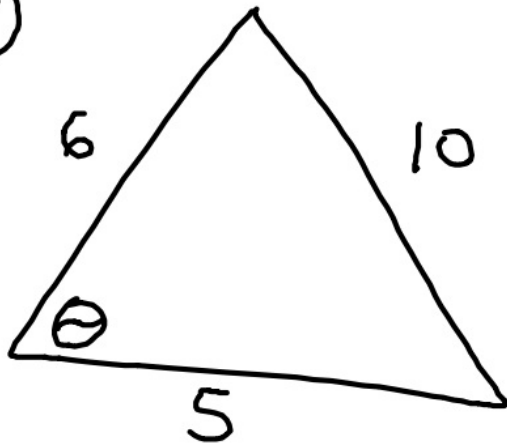
$$\begin{array}{r} -41 \\ -41 \end{array}$$

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

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

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

⑤



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

$$10^2 = 5^2 + 6^2 - 2 \cdot 5 \cdot 6 \cdot \cos \theta$$

$$100 = 25 + 36 - 60 \cdot \cos \theta$$

$$100 = 61 - 60 \cdot \cos \theta$$

$$\begin{array}{r} 100 \\ -61 \\ \hline \end{array} \quad \begin{array}{r} -60 \cdot \cos \theta \\ -61 \\ \hline \end{array}$$

$$\frac{39}{-60} = \frac{-60 \cdot \cos \theta}{-60}$$

$$\cos^{-1} \frac{39}{-60} = \cos^{-1} \cos \theta$$

$$\theta \approx 130.5^\circ$$