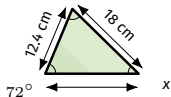


Build Tasks – Answers



Find x in each triangle. Choose the complete opposite pair yourself, rearrange, use inverse sine, and give x to 1 d.p.

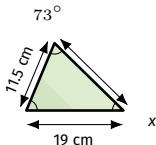
1.



Solution

$$\frac{\sin x}{12.4} = \frac{\sin 72^\circ}{18}$$
$$\sin x = \frac{12.4 \sin 72^\circ}{18} = 0.655$$
$$x = 40.9^\circ$$

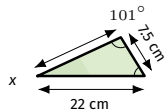
2.



Solution

$$\sin x = \frac{11.5 \sin 73^\circ}{19} = 0.579$$
$$x = 35.4^\circ$$

3.



Solution

$$\sin x = \frac{7.5 \sin 101^\circ}{22} = 0.335$$
$$x = 19.6^\circ$$

4.



Solution

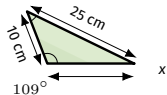
$$\sin x = \frac{6.4 \sin 82^\circ}{16} = 0.396$$
$$x = 23.3^\circ$$

Build Tasks — Answers



Find x in each triangle. Show the substitution and the line with $\sin x$ isolated before using $\sin^{-1}$.

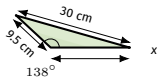
5.



Solution

$$\begin{aligned}\frac{\sin x}{10} &= \frac{\sin 109^\circ}{25} \\ \sin x &= \frac{10 \sin 109^\circ}{25} = 0.378 \\ x &= 22.2^\circ\end{aligned}$$

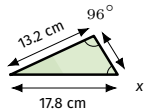
6.



Solution

$$\begin{aligned}\sin x &= \frac{9.5 \sin 138^\circ}{30} = 0.212 \\ x &= 12.2^\circ\end{aligned}$$

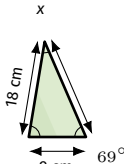
7.



Solution

$$\begin{aligned}\sin x &= \frac{13.2 \sin 96^\circ}{17.8} = 0.738 \\ x &= 47.5^\circ\end{aligned}$$

8.



Solution

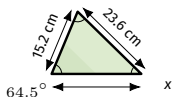
$$\begin{aligned}\sin x &= \frac{9 \sin 69^\circ}{18} = 0.467 \\ x &= 27.8^\circ\end{aligned}$$

Build Tasks — Answers



Find x in each triangle and justify its relative size. Use full calculator values, then compare x with the known angle using their opposite sides.

9.



Solution

$$\sin x = \frac{15.2 \sin 64.5^\circ}{23.6} =$$

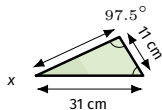
$$0.581$$

$$x = 35.5^\circ$$

$$x < 64.5^\circ \text{ since}$$

$$15.2 < 23.6.$$

10.



Solution

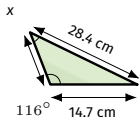
$$\sin x = \frac{11 \sin 97.5^\circ}{31} =$$

$$0.352$$

$$x = 20.6^\circ$$

$$x < 97.5^\circ \text{ since } 11 < 31.$$

11.



Solution

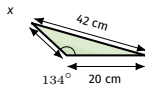
$$\sin x = \frac{14.7 \sin 116^\circ}{28.4} =$$

$$0.465$$

$$x = 27.7^\circ$$

$$x < 116^\circ \text{ since } 14.7 < 28.4.$$

12.



Solution

$$\sin x = \frac{20 \sin 134^\circ}{42} =$$

$$0.343$$

$$x = 20.0^\circ$$

$$x < 134^\circ \text{ since } 20 < 42.$$