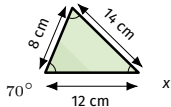


Start Tasks — Answers



Read across each triangle to match angles with opposite sides. Name the known pair and the x-pair, then write the two matched Sine Rule fractions.

1.

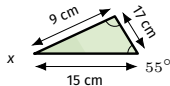


Solution

Opposite side is the one not touching x's vertex.

x is opposite the 8 cm side.

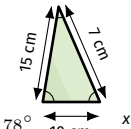
2.



Solution

x is opposite the 17 cm side.

3.

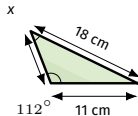


Solution

Known pair: 78° and 7 cm.

x-pair: x and 15 cm.

4.



Solution

x opposite 11; 112°
opposite 18.

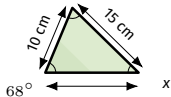
$$\frac{\sin x}{11} = \frac{\sin 112^\circ}{18}$$

Start Tasks — Answers



Find the acute angle x in each triangle. Substitute matching pairs, rearrange to $\sin x$, then use inverse sine. Give x to 1 d.p.

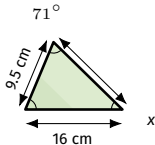
5.



Solution

$$\begin{aligned}\frac{\sin x}{10} &= \frac{\sin 68^\circ}{15} \\ \sin x &= \frac{10 \sin 68^\circ}{15} = 0.618 \\ x &= 38.2^\circ\end{aligned}$$

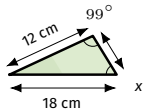
6.



Solution

$$\begin{aligned}\sin x &= \frac{9.5 \sin 71^\circ}{16} = 0.561 \\ x &= 34.2^\circ\end{aligned}$$

7.



Solution

$$\begin{aligned}\sin x &= \frac{12 \sin 99^\circ}{18} = 0.658 \\ x &= 41.2^\circ\end{aligned}$$

8.



Solution

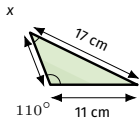
$$\begin{aligned}\sin x &= \frac{9 \sin 80^\circ}{20} = 0.443 \\ x &= 26.3^\circ\end{aligned}$$

Start Tasks — Answers



Find x in each triangle and check using side order: the shorter side must be opposite the smaller angle. Round only the final angle.

9.



Solution

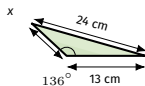
$$\sin x = \frac{11 \sin 110^\circ}{17} =$$

$$0.608$$

$$x = 37.4^\circ$$

$$11 < 17 \text{ so } x < 110^\circ. \checkmark$$

10.



Solution

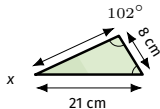
$$\sin x = \frac{13 \sin 136^\circ}{24} =$$

$$0.376$$

$$x = 22.1^\circ$$

$$13 < 24 \text{ so } x < 136^\circ. \checkmark$$

11.



Solution

$$\sin x = \frac{8 \sin 102^\circ}{21} = 0.373$$

$$x = 21.9^\circ$$

$$8 < 21 \text{ so } x < 102^\circ. \checkmark$$

12.



Solution

$$\sin x = \frac{7 \sin 65^\circ}{14} = 0.453$$

$$x = 26.9^\circ$$

$$7 < 14 \text{ so } x < 65^\circ. \checkmark$$