

Sine Rule: Finding an Angle *stretch*

ANSWERS 

1



In triangle XYZ , $XY = 7.2$ cm,
 $YZ = 9.5$ cm and angle $X = 61^\circ$.
Find angle Z to 1 decimal place.

$$\sin Z = \frac{7.2 \times \sin 61^\circ}{9.5}$$

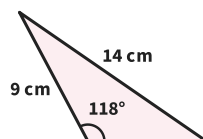
$$41.5^\circ$$

Answer

2



Find the smallest angle of the triangle, to 1 decimal place.



$$\sin = 9 \sin 118^\circ \div 14, \text{ so } 34.6^\circ$$

$$180^\circ - 118^\circ - 34.6^\circ$$

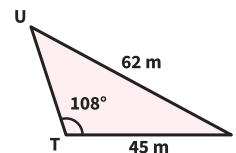
$$27.4^\circ$$

Answer

3



From a bench P , a tree T is 45 m away
and a tree U is 62 m away.
Angle $PTU = 108^\circ$. Find angle PUT to
1 decimal place.



$$\sin U = \frac{45 \times \sin 108^\circ}{62}$$

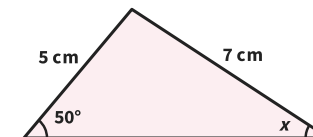
$$43.7^\circ$$

Answer

4



Zoe writes $\sin x = 7 \times \sin 50^\circ \div 5$ and
her calculator says Math ERROR.
Explain why, then find x to 1
decimal place.



$$7 \sin 50^\circ \div 5 = 1.072, \text{ more than } 1$$

$$\sin x = 5 \sin 50^\circ \div 7 \text{ (sides swapped)}$$

$$x = 33.2^\circ$$

Answer

5



In triangle ABC , $AB = 11$ cm,
 $AC = 8$ cm and angle $C = 74^\circ$.
Find the area of the triangle, to 3
significant figures.

$$\sin B = 8 \sin 74^\circ \div 11, B = 44.35^\circ$$

$$A = 61.65^\circ, \frac{1}{2} \times 11 \times 8 \times \sin A$$

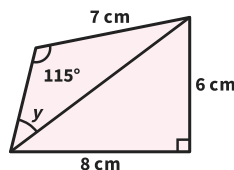
$$38.7 \text{ cm}^2$$

Answer

6



Find angle y to 1 decimal place.



$$\text{diagonal} = \sqrt{8^2 + 6^2} = 10 \text{ cm}$$

$$\sin y = 7 \sin 115^\circ \div 10$$

$$39.4^\circ$$

Answer

7



In a triangle the angle opposite 8 cm
is 50° . Kai says the angle opposite
6 cm is 37.5° , because
 $6 \div 8 \times 50 = 37.5$. Explain his mistake
and find the angle to 1 decimal place.

$$\text{sines are in proportion, not angles}$$

$$\sin = 6 \sin 50^\circ \div 8$$

$$35.1^\circ$$

Answer

8



In triangle ABC , BC is twice as long
as AC and angle $A = 70^\circ$. Find angle B
to 1 decimal place.

$$\frac{\sin B}{AC} = \frac{\sin 70^\circ}{2AC}$$

$$\sin B = \frac{\sin 70^\circ}{2}$$

$$28.0^\circ$$

Answer