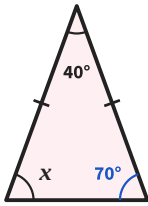


Angles in Isosceles Triangles

ANSWERS

1 Equal sides, equal base angles.

Find the size of angle x .

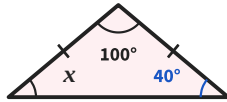


$$180 - 40 = 140$$

$$140 \div 2 = 70$$

$$x = 70^\circ$$

2 Find the size of angle x .

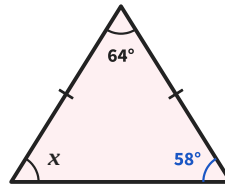


$$180 - 100 = 80$$

$$80 \div 2 = 40$$

$$x = 40^\circ$$

3 Find the size of angle x .

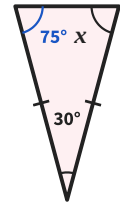


$$180 - 64 = 116$$

$$116 \div 2 = 58$$

$$x = 58^\circ$$

4 Find the size of angle x .



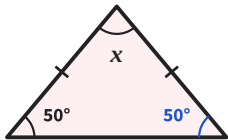
$$180 - 30 = 150$$

$$150 \div 2 = 75$$

$$x = 75^\circ$$

5 Notice the change!

Find the size of angle x .

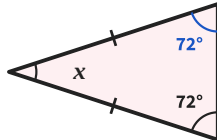


$$50 + 50 = 100$$

$$180 - 100 = 80$$

$$x = 80^\circ$$

6 Find the size of angle x .

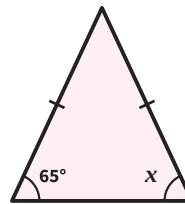


$$72 + 72 = 144$$

$$180 - 144 = 36$$

$$x = 36^\circ$$

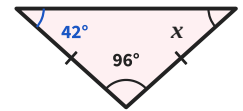
7 Find angle x . Give a reason.



Reason: Base angles are equal.

$$x = 65^\circ$$

8 Find angle x . Give a reason.



$$180 - 96 = 84, 84 \div 2 = 42$$

Reason: Base angles are equal.

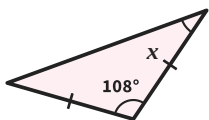
$$x = 42^\circ$$

Angles in Isosceles Triangles further practice

ANSWERS

9

Find angle x . Give a reason.



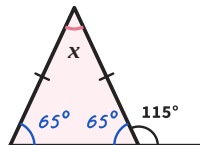
$$180 - 108 = 72, 72 \div 2 = 36$$

Reason: base angles are equal

$$x = 36^\circ$$

10

Find angle x .



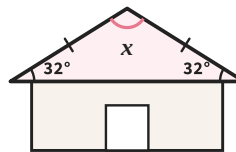
$$\text{base angle } 180 - 115 = 65$$

$$x = 180 - 65 - 65$$

$$x = 50^\circ$$

11

The two sloping edges of this roof are the same length. Each slopes at 32° to the horizontal. Find the angle x at the top of the roof.

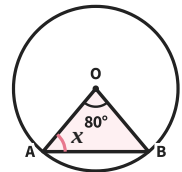


$$32 + 32 = 64, 180 - 64$$

$$x = 116^\circ$$

12

O is the centre of the circle. A and B are on the circle. Find angle x .



OA and OB are both radii, so $OA = OB$

$$(180 - 80) \div 2$$

$$x = 50^\circ$$

13

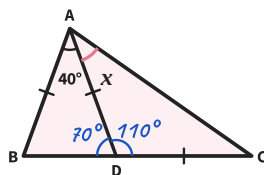
A triangular sail has angles of 50° and 80° . Is the sail an isosceles triangle? Explain.

$$\text{third angle} = 180 - 50 - 80 = 50$$

Answer: Yes, two angles are 50°

14

BDC is a straight line. $AB = AD = DC$. Find angle x .



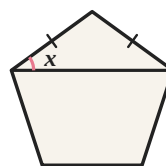
$$ADB = (180 - 40) \div 2 = 70^\circ$$

$$ADC = 180 - 70 = 110^\circ$$

$$x = 35^\circ$$

15

The diagram shows a regular pentagon with one diagonal drawn. Find angle x .



$$\text{interior angle} = 540 \div 5 = 108^\circ$$

$$x = (180 - 108) \div 2$$

$$x = 36^\circ$$

16

Can a base angle of an isosceles triangle be 100° ? Explain your answer.

the other base angle is 100° too

$$100 + 100 = 200, \text{ more than } 180^\circ$$

Answer: No