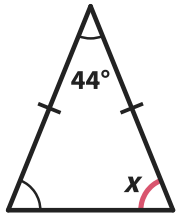
Angles in isosceles triangles

ANSWERS

1

The triangle is isosceles. Find the size of angle x.



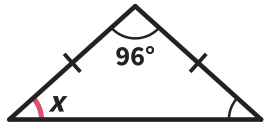
180° − 44° = 136°

136° ÷ 2 = 68°

x = 68°

2

The triangle is isosceles. Find the size of angle x.



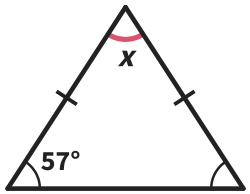
180° − 96° = 84°

84° ÷ 2 = 42°

x = 42°

3

The triangle is isosceles. Find the size of angle x.



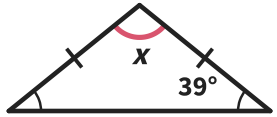
57° + 57° = 114°

180° − 114° = 66°

x = 66°

4

The triangle is isosceles. Find the size of angle x.



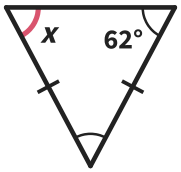
39° + 39° = 78°

180° − 78° = 102°

x = 102°

5 Notice the change!

The triangle is isosceles. Find the size of angle x. Give a reason.

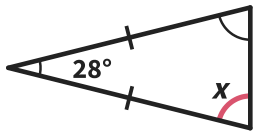


Reason: base angles in an isosceles triangle are equal

x = 62°

6

The triangle is isosceles. Find the size of angle x. Give your reasons.



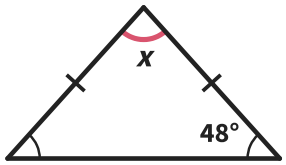
180° − 28° = 152°, 152° ÷ 2 = 76°

Reasons: triangle adds to 180°; base angles equal

x = 76°

7

Leo says $x = 48°$ because two angles in an isosceles triangle are equal.
Explain why Leo is wrong, then find x.



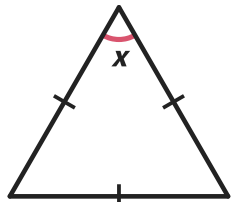
x is the top angle, not a base angle

48° + 48° = 96°, 180° − 96° = 84°

x = 84°

8

All three sides of this triangle are equal.
Find the size of angle x. Give a reason.



180° ÷ 3 = 60°

Reason: an equilateral triangle has three equal angles

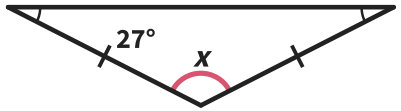
x = 60°

Angles in isosceles triangles *further practice*

ANSWERS

9

The triangle is isosceles. Find the size of angle x.



27° + 27° = 54°

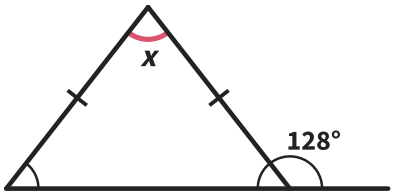
180° − 54° = 126°

126°

x =

10

The triangle is isosceles. Find the size of angle x. Give a reason for each step.



180° − 128° = 52° (straight line)

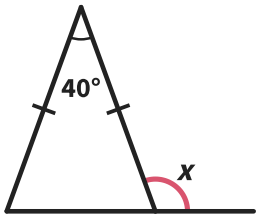
52° + 52° = 104°, 180° − 104° = 76°

76°

x =

11

The triangle is isosceles. Find the size of angle x.



180° − 40° = 140°, 140° ÷ 2 = 70°

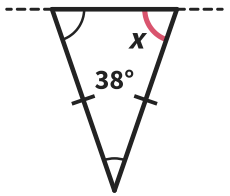
180° − 70° = 110° (straight line)

110°

x =

12

A bunting flag is an isosceles triangle. The angle at its point is 38°.
Find the angle x at a top corner.



180° − 38° = 142°

142° ÷ 2 = 71°

71°

x =

13

A triangle has angles of 35° and 75°. Kai says it is isosceles. Is Kai right? Show how you know.

180° − 35° − 75° = 70°

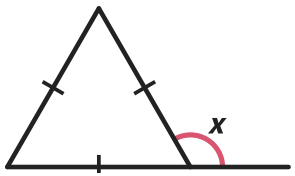
35°, 75° and 70°: no two are equal

No

Answer

14

The triangle is equilateral.
Find the size of angle x.



each angle is 180° ÷ 3 = 60°

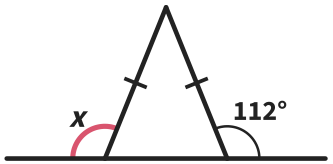
180° − 60° = 120°

120°

x =

15

The triangle is isosceles. Find the size of angle x. Explain your answer.



180° − 112° = 68°, so both base angles are 68°

180° − 68° = 112°

112°

x =

16

The top angle of an isosceles triangle is 30°. Zoe works out a base angle: 180° ÷ 2 = 90°, then 90° − 30° = 60°. Explain Zoe's mistake and find the base angle.

she halved before taking the top away

180° − 30° = 150°, 150° ÷ 2 = 75°

75°

Base angle =