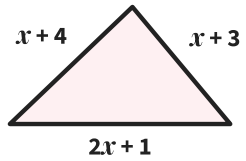
Forming and solving equations: perimeter

ANSWERS

1

The perimeter of this triangle is 32 cm. Form an equation and solve it to find x.



Add every side. The total is the perimeter.

$2x + 1 + x + 3 + x + 4 = 32$

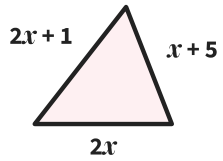
$4x + 8 = 32$

$4x = 24$

$x =$ 6

2

The perimeter of this triangle is 36 cm. Form an equation and solve it to find x.



$2x + x + 5 + 2x + 1 = 36$

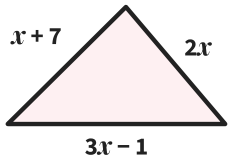
$5x + 6 = 36$

$5x = 30$

$x =$ 6

3

The perimeter of this triangle is 42 cm. Form an equation and solve it to find x.



$3x - 1 + 2x + x + 7 = 42$

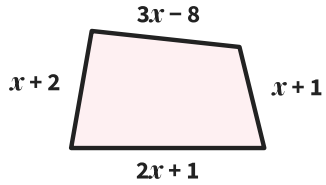
$6x + 6 = 42$

$6x = 36$

$x =$ 6

4

The perimeter of this quadrilateral is 38 cm. Form an equation and solve it to find x.



$2x + 1 + x + 1 + 3x - 8 + x + 2 = 38$

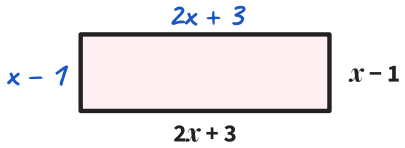
$7x - 4 = 38$

$7x = 42$

$x =$ 6

5 *Notice the change!*

The perimeter of this rectangle is 34 cm. Form an equation and solve it to find x.



$2x + 3 + x - 1 + 2x + 3 + x - 1 = 34$

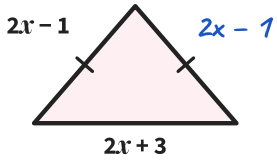
$6x + 4 = 34$

$6x = 30$

$x =$ 5

6

The perimeter of this isosceles triangle is 43 cm. Form an equation and solve it to find x.



$2x + 3 + 2x - 1 + 2x - 1 = 43$

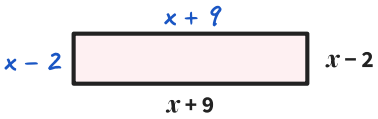
$6x + 1 = 43$

$6x = 42$

$x =$ 7

7

The perimeter of this rectangle is 34 cm. Kai writes $x + 9 + x - 2 = 34$. Explain his mistake. Then find x.



He added only 2 of the 4 sides

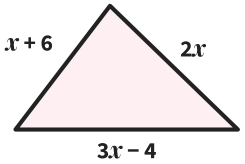
$x + 9 + x - 2 + x + 9 + x - 2 = 34$

$4x + 14 = 34$, $4x = 20$

$x =$ 5

8

The perimeter of this triangle is 50 cm. Find the length of the longest side.



$3x - 4 + x + 6 + 2x = 50$

$6x + 2 = 50$, so $x = 8$

$3 \times 8 - 4 = 20$

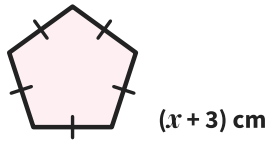
Longest side 20 cm

Forming and solving equations: perimeter *further practice*

ANSWERS

9

This regular pentagon has a perimeter of 40 cm. Find x.



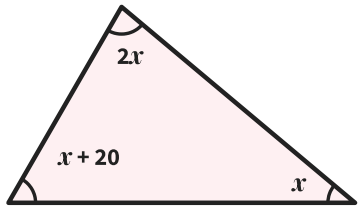
5(x + 3) = 40, 5x + 15 = 40

5x = 25

x = 5

10

Angles in a triangle add to 180°. Find x.



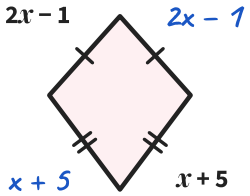
x + 20 + 2x + x = 180

4x + 20 = 180, 4x = 160

x = 40

11

The perimeter of this kite is 38 cm. Find the length of its longest side.



2(x + 5) + 2(2x − 1) = 38

6x + 8 = 38, x = 5, so 5 + 5

Answer 10 cm

12

A rectangular photo frame is 8 cm longer than it is wide. Its perimeter is 64 cm. Find its width and its length.

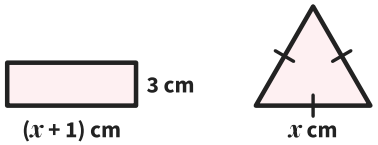
w + 8 + w + w + 8 + w = 64

4w + 16 = 64, 4w = 48

Answer 12 cm and 20 cm

13

The rectangle and the equilateral triangle have the same perimeter. Find x.



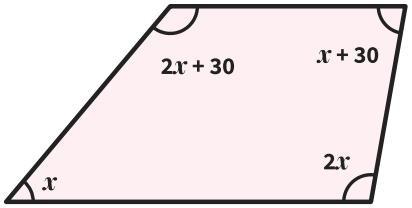
2(x + 1) + 6 = 3x

2x + 8 = 3x, so 8 = x

x = 8

14

Angles in a quadrilateral add to 360°. Find the largest angle.



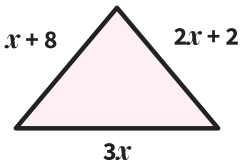
6x + 60 = 360

6x = 300, x = 50, so 2 × 50 + 30

Answer 130°

15

The perimeter of this triangle is 46 cm. Show that the triangle is isosceles.



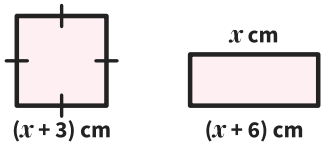
6x + 10 = 46, so x = 6

the sides are 18, 14 and 14

Answer two sides are 14 cm

16

Ella says the square and the rectangle have the same perimeter, so she can find x. Explain why she cannot.



both perimeters are 4x + 12

4x + 12 = 4x + 12 for every x

Answer true for every x