

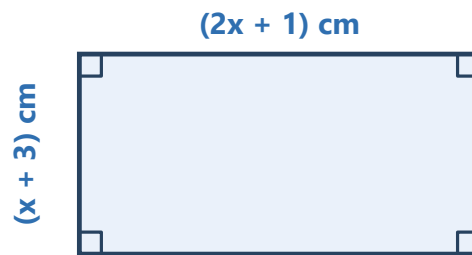
GCSE Maths: Equations from geometry: perimeters and angles (Higher): answers

GCSE Maths - Linear Equations - Higher - Lesson 9.8

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch09-linear-equations/higher/equations-from-geometry-perimeters-and-angles/

Exercise 9H Equations from perimeters and angles Non-calculator

- 1 The perimeter of the rectangle is 32 cm. Work out the value of x .

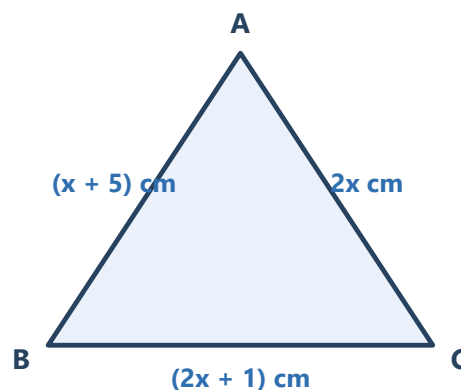


Answer: $x = 4$

- 2 A square has sides of length $(4x - 3) \text{ cm}$. The perimeter of the square is 52 cm. Work out the value of x , and the length of one side.

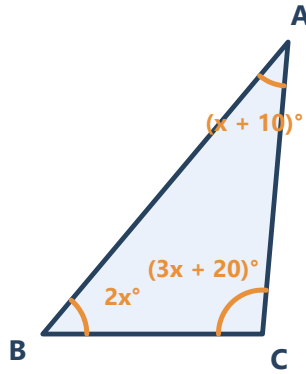
Answer: $x = 4$, side 13 cm

- 3 The perimeter of the triangle is 31 cm. Find the length of the longest side.



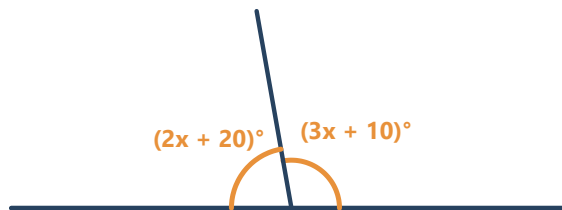
Answer: 11 cm

- 4 Work out the value of x , and the size of the largest angle in the triangle.



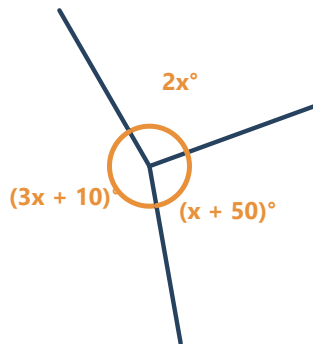
Answer: $x = 25$, largest angle 95°

- 5 The angles are on a straight line. Work out the value of x .



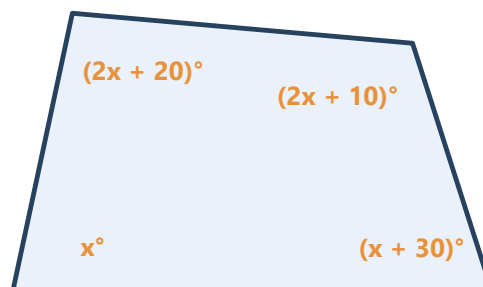
Answer: $x = 30$

- 6 Three angles meet at a point. Work out the value of x , and the size of the smallest angle.



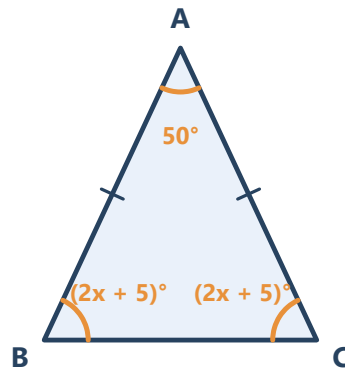
Answer: $x = 50$, smallest angle 100°

- 7 The four angles of the quadrilateral add up to 360° . Work out the value of x .



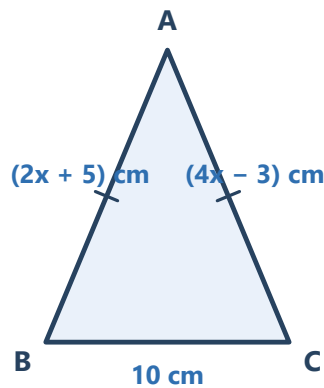
Answer: $x = 50$

- 8 Triangle ABC is isosceles. Work out the value of x , and the size of each base angle.



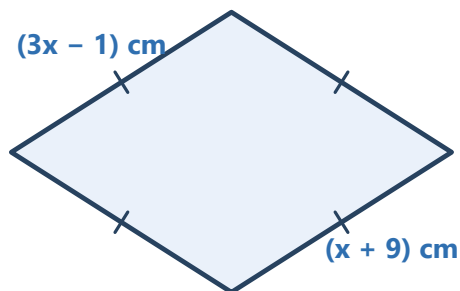
Answer: $x = 30$, base angles 65°

- 9 Triangle ABC is isosceles with $AB = AC$. Work out the perimeter of the triangle.



Answer: 36 cm

- 10 The shape is a rhombus. Work out the perimeter of the rhombus.



Answer: 56 cm

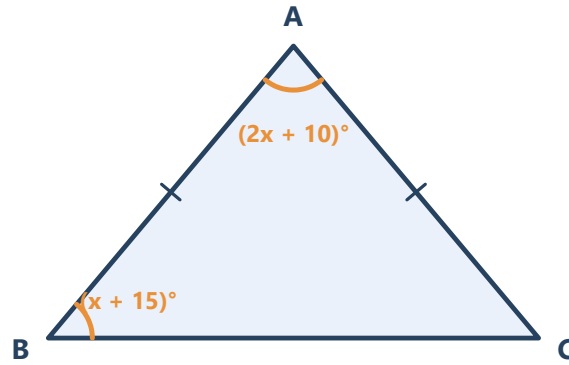
- 11 Zane says that the triangle with angles x° , $2x^\circ$ and $3x^\circ$ must have a right angle. Is he correct? You must show your working.

Answer: Yes: $x = 30$, so the angles are 30° , 60° and 90° .

- 12 The angles of a triangle are $(2x - 10)^\circ$, $(x + 30)^\circ$ and $(3x - 20)^\circ$. Find the size of the largest angle.

Answer: 70°

- 13** Triangle ABC is isosceles with $AB = AC$. Angle $ABC = (x + 15)^\circ$ and angle $BAC = (2x + 10)^\circ$. Work out the size of angle BAC .



Answer: 80°

- 14** An equilateral triangle has sides of length $(2x + 1)$ cm. A square has sides of length $(x + 4)$ cm. The two shapes have the same perimeter. Work out the value of x .

Answer: $x = \frac{13}{2}$

- 15** The angles of a quadrilateral are $3x^\circ$, $(2x + 20)^\circ$, $(x + 40)^\circ$ and 80° . Work out the value of x .

Answer: $x = \frac{110}{3}$