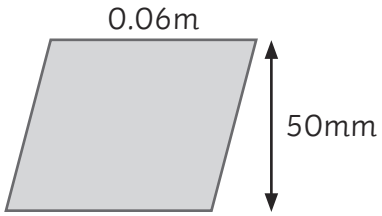
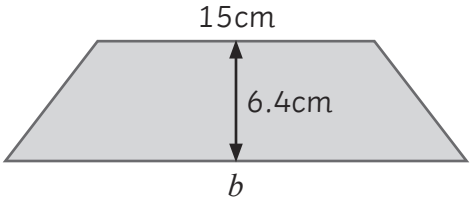
Area

1. The area of a square is 196cm^2. Calculate its length.

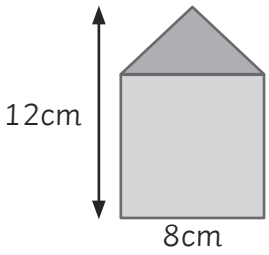
2. Calculate the area of the parallelogram. Give your answer in cm^2.



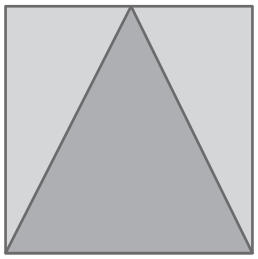
3. The area of the trapezium is 128cm^2. Calculate the length (b).



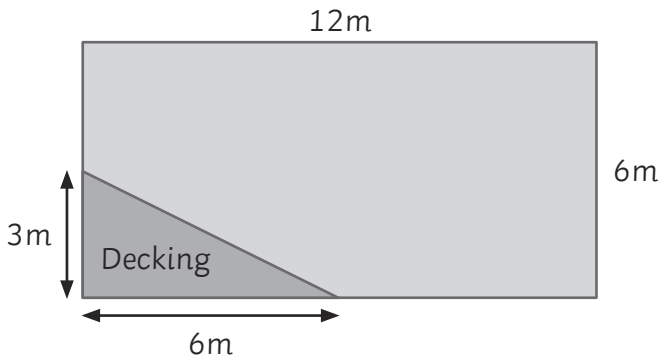
4. The following shape is made up of a triangle and a square. The triangle sits directly on top of the square. Calculate the total area. **Remember to show your workings.**



5. A triangle is placed inside a square as shown below. Calculate the area of the shaded section.

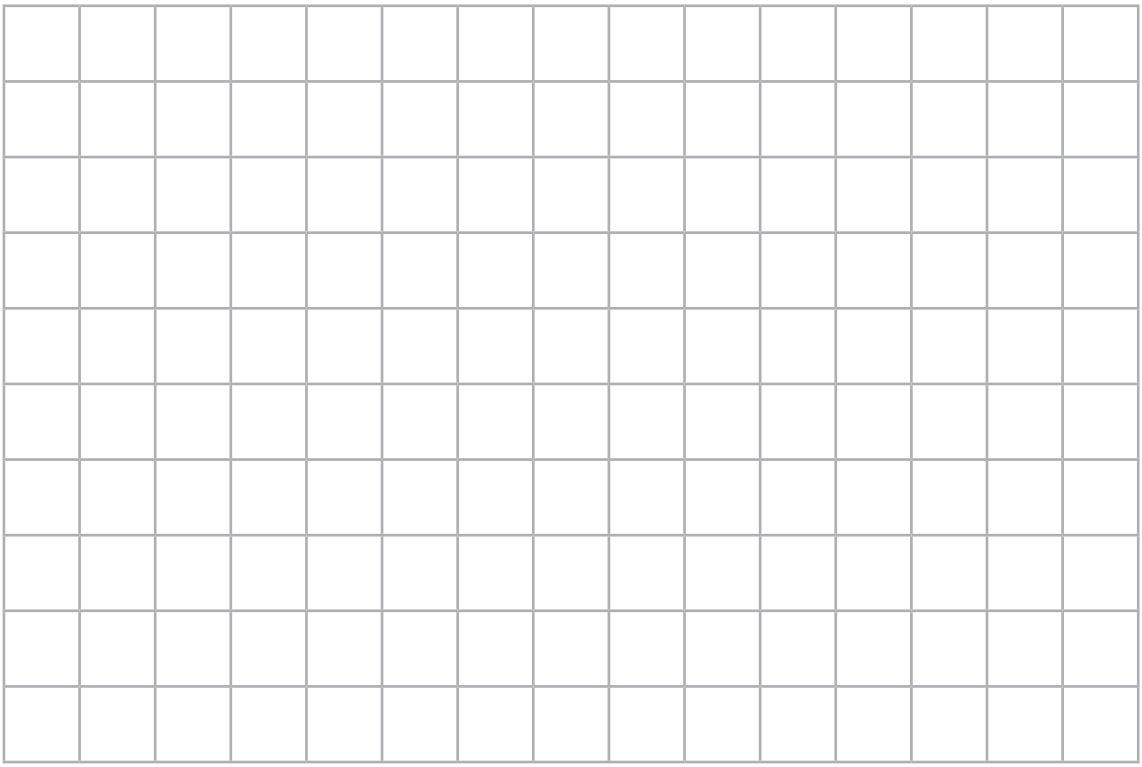


6. Ms Shrigley has a rectangular garden. She has decked part of the garden but the rest is soil.



Ms Shrigley would like to plant grass seeds in the soil. A bag of grass seeds will cover $2m^2$ exactly and costs £3.49. How much will it cost Ms Shrigley to plant seeds in the soil part of her garden?

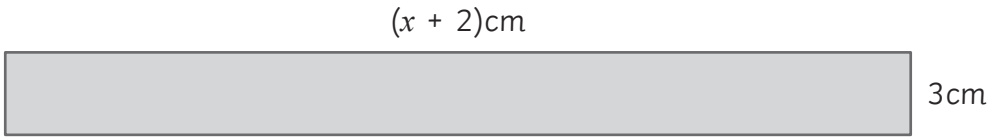
7. Draw a 4-sided shape which has the same numerical value for area and perimeter.



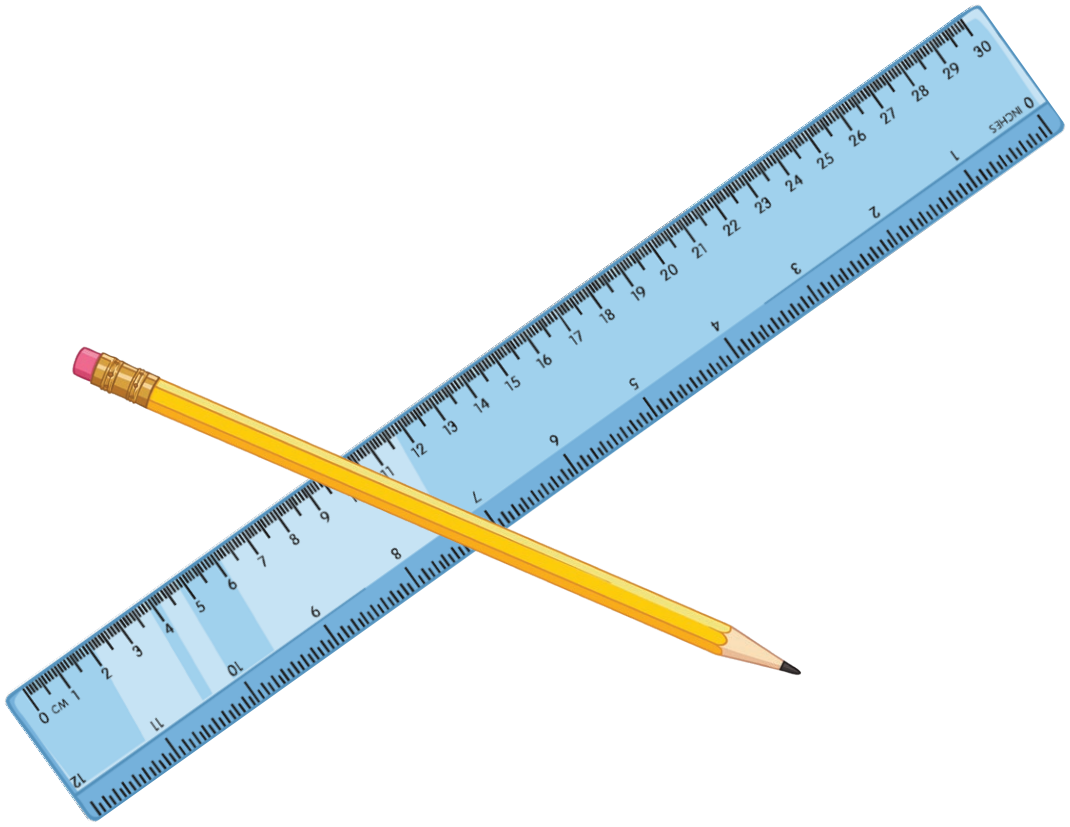
8. Draw three 4-sided shapes which have the same perimeter but different areas.

Extension

a. The following rectangle has an area of 96cm^2. Find the value of x.



b. Hence or otherwise, calculate the perimeter of the rectangle.

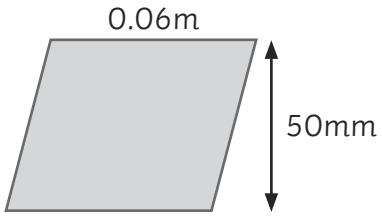


Area - Answers

1. The area of a square is 196cm^2. Calculate its length.

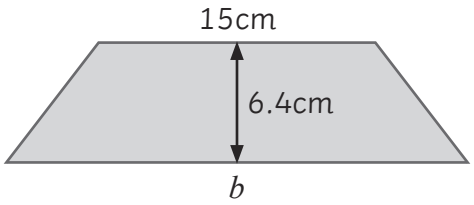
$\sqrt{196}$ = 14cm

2. Calculate the area of the parallelogram. Give your answer in cm^2.



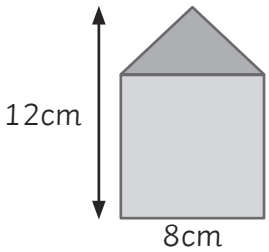
Base: 0.06m = 6cm
Height: 50mm = 5cm
Area: 6 × 5 = 30cm^2

3. The area of the trapezium is 128cm^2. Calculate the length (b).



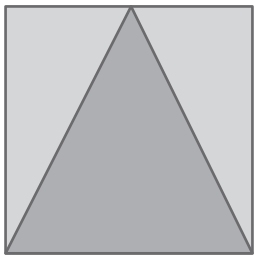
128 × 2 = 256cm^2
256 ÷ 6.4 = 40cm
40 - 15 = 25cm
***b* = 25cm**

4. The following shape is made up of a triangle and a square. The triangle sits directly on top of the square. Calculate the total area. **Remember to show your workings.**



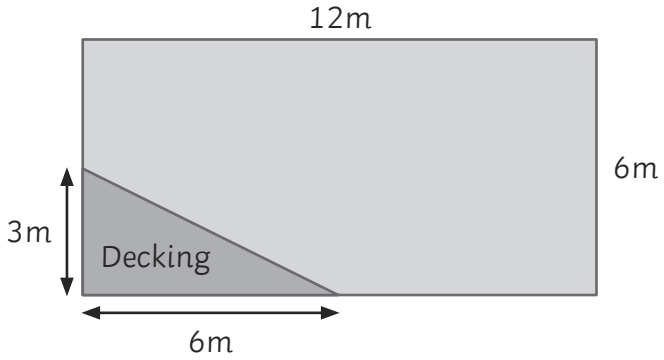
Area of square: 8 × 8 = 64cm^2
Height of triangle: 12 - 8 = 4cm
Area of triangle: $\frac{1}{2}$ (8 × 4) = 16cm^2
Total area: 64 + 16 = 80cm^2

5. A triangle is placed inside a square as shown below. Calculate the area of the shaded section.



Area of square: 6 × 6 = 36cm²
Area of triangle: $\frac{1}{2}$ × (6 × 6) = 18cm²
Shaded area: 36 - 18 = 18cm²

6. Ms Shrigley has a rectangular garden. She has decked part of the garden but the rest is soil.



Ms Shrigley would like to plant grass seeds in the soil. A bag of grass seeds will cover 2m² exactly and costs £3.49. How much will it cost Ms Shrigley to plant seeds in the soil part of her garden?

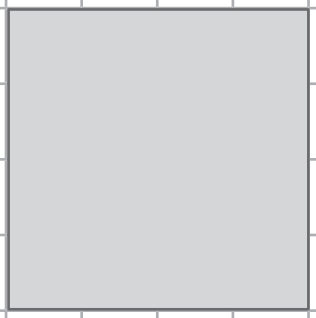
Area of rectangle: 12 × 6 = 72m²
Area of triangle: $\frac{1}{2}$ × (3 × 6) = 9m²
Area of soil: 72 - 9 = 63m²

63 ÷ 2 = 31.5
Ms Shrigley will need 32 bags of grass seeds.

32 × 3.49 = £111.68
It will cost £111.68

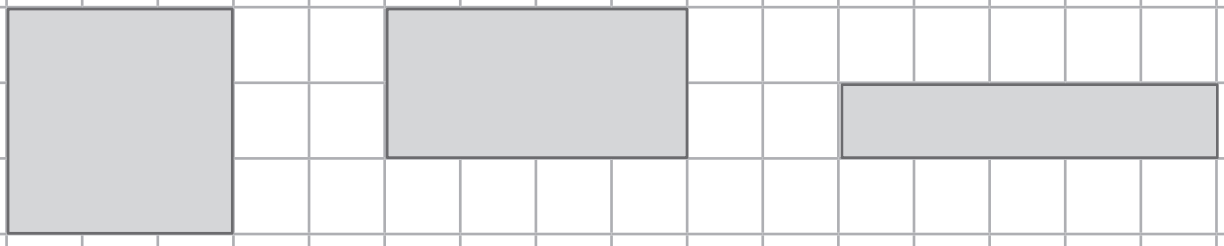
7. Draw a 4-sided shape which has the same numerical value for area and perimeter.

Any shape that satisfies the criteria. One possible example:



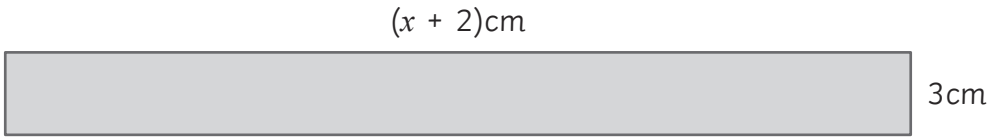
8. Draw three 4-sided shapes which have the same perimeter but different areas.

Any 3 shapes that satisfy the criteria. One possible example:



Extension

a. The following rectangle has an area of 96cm^2. Find the value of x.



$3(x + 2) = 96$
$3x + 6 = 96$
$3x = 90$
$x = 30$

b. Hence or otherwise, calculate the perimeter of the rectangle.

$(x + 2) = 30 + 2$

$32 + 32 + 3 + 3 = 70$cm