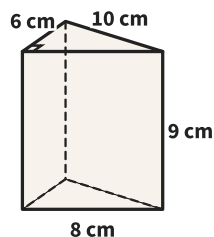


Volume of Prisms

1

This prism stands on one of its triangular ends. Work out its volume.



Not drawn accurately

cross section: the triangle,
 $\frac{1}{2} \times 8 \times 6 = 24 \text{ cm}^2$

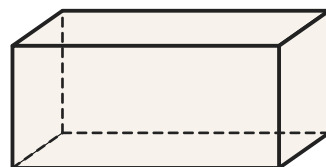
24×9 (10 cm is not needed)

216 cm^3

Answer

2

Each end of this prism is a square with a perimeter of 22 cm. Work out the volume of the prism.



12 cm

Not drawn accurately

each side of the square = $22 \div 4 = 5.5 \text{ cm}$

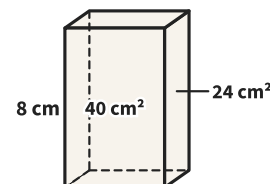
$5.5 \times 5.5 \times 12$

363 cm^3

Answer

3

This cuboid is 8 cm tall. Its front face has an area of 40 cm^2 and its end face has an area of 24 cm^2 . Work out its volume.



Not drawn accurately

length = $40 \div 8 = 5 \text{ cm}$,
 depth = $24 \div 8 = 3 \text{ cm}$

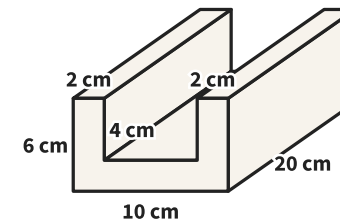
$5 \times 3 \times 8$

120 cm^3

Answer

4

A concrete channel is a prism with this cross section. Work out its volume.



Not drawn accurately

gap = $10 - 2 - 2 = 6 \text{ cm}$, so
 $10 \times 6 - 6 \times 4 = 36 \text{ cm}^2$

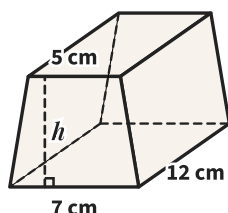
36×20

720 cm^3

Answer

5

The volume of this trapezium prism is 432 cm^3 . Work out the height h of the trapezium.



Not drawn accurately

cross section = $432 \div 12 = 36 \text{ cm}^2$

$\frac{1}{2} \times (5 + 7) \times h = 36$, so $6h = 36$

$h = 6 \text{ cm}$

Answer

6

A planter is a triangular prism 90 cm long. Its ends are triangles with a base of 30 cm and a height of 20 cm, and it is full of soil. All the soil is tipped into an empty raised bed, a cuboid with a base 45 cm by 30 cm. How deep is the soil in the bed?

soil = $\frac{1}{2} \times 30 \times 20 \times 90 = 27\,000 \text{ cm}^3$

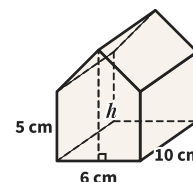
$27\,000 \div (45 \times 30) = 27\,000 \div 1350$

20 cm

Answer

7

The volume of this prism is 390 cm^3 . Work out its height h .



Not drawn accurately

cross section = $390 \div 10 = 39$, rectangle
 $6 \times 5 = 30$

triangle $39 - 30 = 9 = \frac{1}{2} \times 6 \times 3$

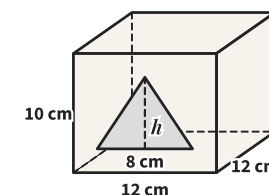
so $h = 5 + 3 = 8$

$h = 8 \text{ cm}$

Answer

8

A triangular tunnel goes right through this wooden block. The volume of wood left is 1152 cm^3 . Work out the height h of the triangle.



Not drawn accurately

tunnel = $12 \times 10 \times 12 - 1152 = 288 \text{ cm}^3$

$\frac{1}{2} \times 8 \times h \times 12 = 288$, so $48h = 288$

$h = 6 \text{ cm}$

Answer