3D Trig/Pythagoras

SCAN ME

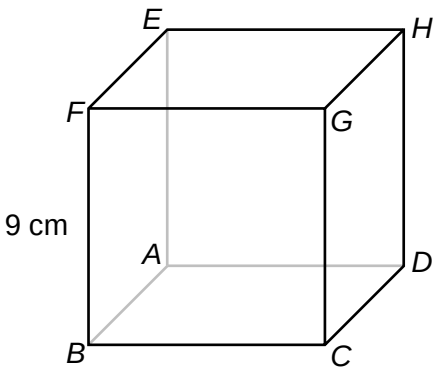
REVISE THIS TOPIC

CHECK YOUR ANSWERS

SCAN ME

1 Here is a cube.

$BF = 9$ cm



1 (a) Work out the length of AC giving your answer to 1 decimal place. **[2 marks]**

Answer _____ cm

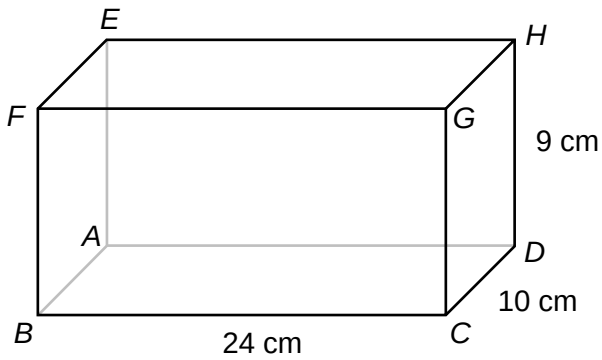
1 (b) Work out the length of CE giving your answer to 1 decimal place. **[2 marks]**

Answer _____ cm

4

2 Here is a cuboid.

BC = 24 cm CD = 10 cm DH = 9 cm



2 (a) Work out the length of BD. **[2 marks]**

Answer _____ cm

2 (b) Work out the length of BH giving your answer to 1 decimal place. **[2 marks]**

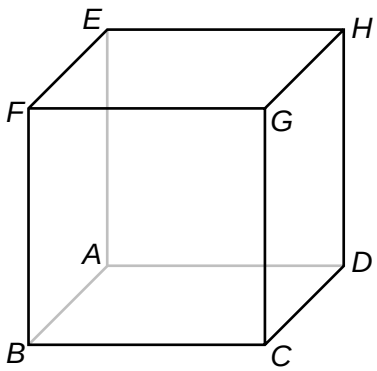
Answer _____ cm

2 (c) Work out the size of angle DBH giving your answer to 1 decimal place. **[2 marks]**

Answer _____ °

Solutions

3 Here is a cube.
The surface area of the cube is 3456 cm^2



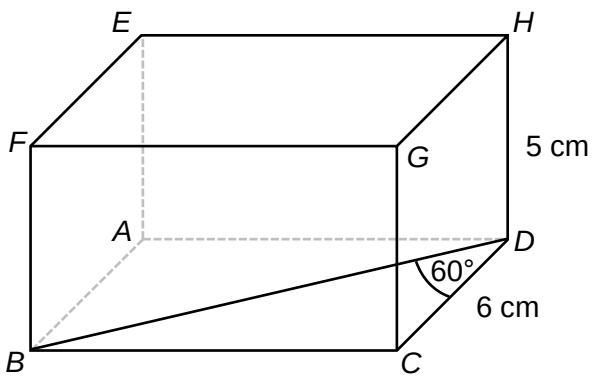
Work out the length of *EC* giving your answer to 1 decimal place. **[5 marks]**

Answer _____ cm

11

4 Here is a cuboid.

CD = 6 cm DH = 5 cm Angle BDC = 60°

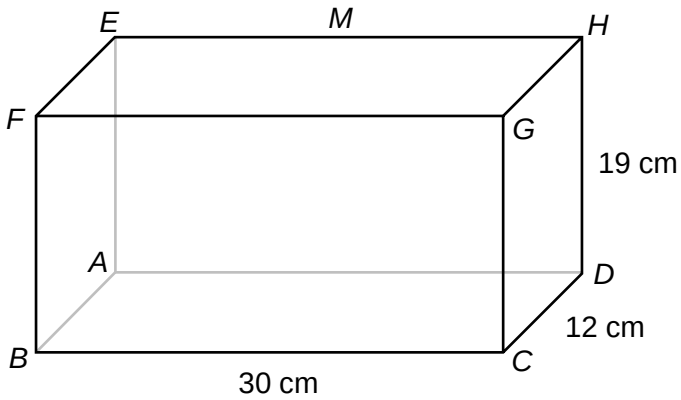


Work out the perimeter of triangle BDH. **[4 marks]**

Answer _____ cm

Solutions

5 Here is a cuboid.
M is the midpoint of line *EH*.
BC = 30 cm *CD* = 12 cm *DH* = 19 cm



Work out the length of *BM* giving your answer to 1 decimal place. **[4 marks]**

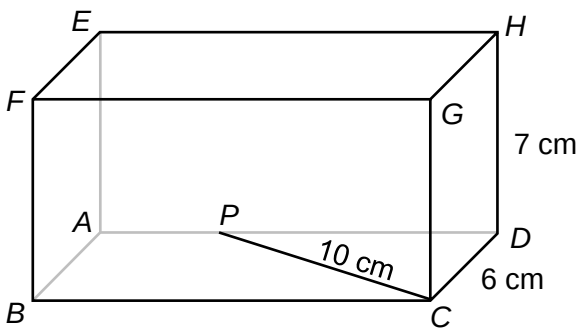
Answer _____ cm

8

6 Here is a cuboid.

P is the point on the line AD so that $AP : PD = 1 : 2$

$CD =$ 6cm $DH =$ 7 cm $PC =$ 10 cm



6 (a) Work out the length of BC giving your answer to 1 decimal place. **[3 marks]**

Answer _____ cm

6 (b) Work out the length of BP giving your answer to 1 decimal place. **[2 marks]**

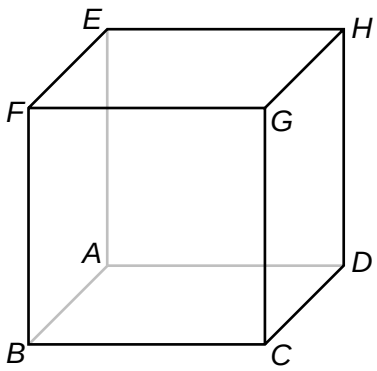
Answer _____ cm

6 (c) Work out the size of angle BPF giving your answer to 1 decimal place. **[2 marks]**

Answer _____ °

Solutions

7 Here is a cube.
BG = 6 cm



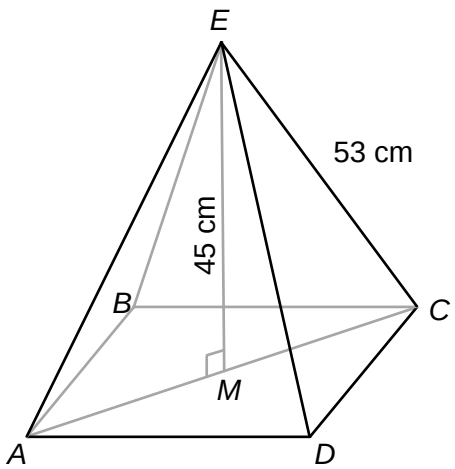
Work out the volume of the cube giving your answer to 1 decimal place. **[4 marks]**

Answer _____ cm^3

11

8 *ABCDE* is a square-based pyramid.
M is the midpoint of the line *AC* and *AC* is perpendicular to *ME*.

EC = 53 cm
EM = 45 cm



Volume of pyramid = $\frac{1}{3}$ × area of base × perpendicular height

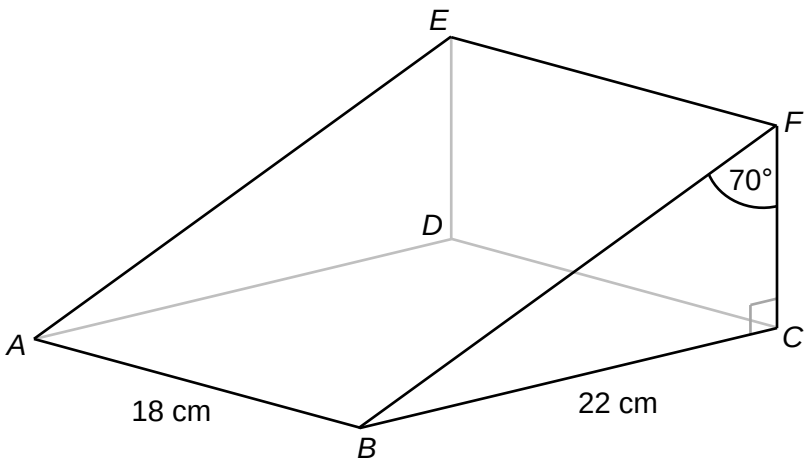
Work out the volume of the pyramid. **[6 marks]**

Answer _____ cm^3

Solutions

9 Here is a triangular prism.

AB = 18 cm BC = 22 cm Angle BFC = 70°



9 (a) Work out the length of AF giving your answer to 1 decimal place. **[4 marks]**

Answer _____ cm

9 (b) Work out the size of angle FAC giving your answer to 1 decimal place.

Answer _____

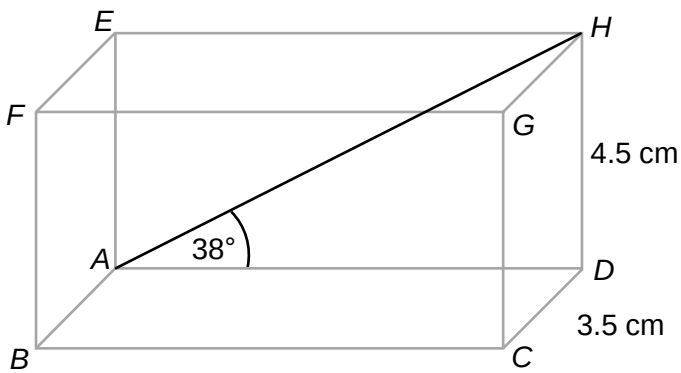
12

Turn over ►

Solutions

10 Here is a cuboid.

CD = 3.5 cm DH = 4.5 cm Angle HAD = 38°



10 (a) Work out the length of AG giving your answer to 1 decimal place. **[4 marks]**

Answer _____ cm

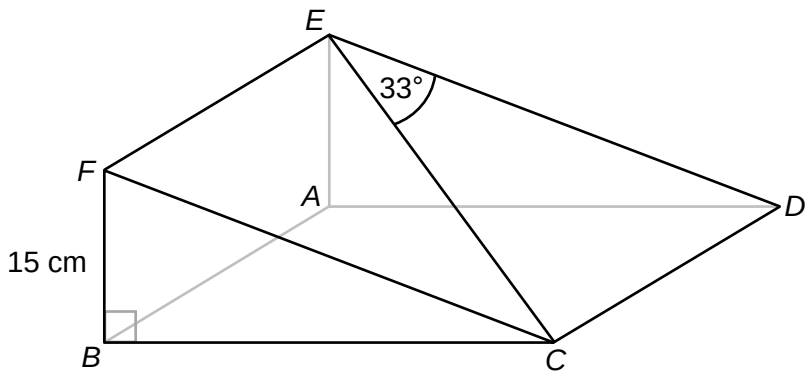
10 (b) Work out the size of angle HAG giving your answer to 1 decimal place. **[2 marks]**

Answer _____ °

Solutions

11 Here is a triangular prism.

BF = 15 cm Angle *CED* = 33°
BF : *BC* = 5 : 12



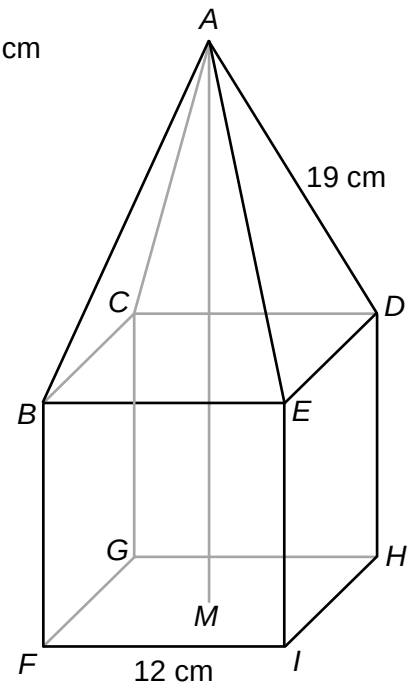
Work out the size of angle *ACE* giving your answer to 1 decimal place. **[6 marks]**

Answer _____ °

12

12 *ABCDE* is a square-based pyramid placed on top of cube *BCDEFGHI*
M is the midpoint of the line *FH* with *FH* perpendicular to *MA*.

FI = 12 cm *AD* = 19 cm



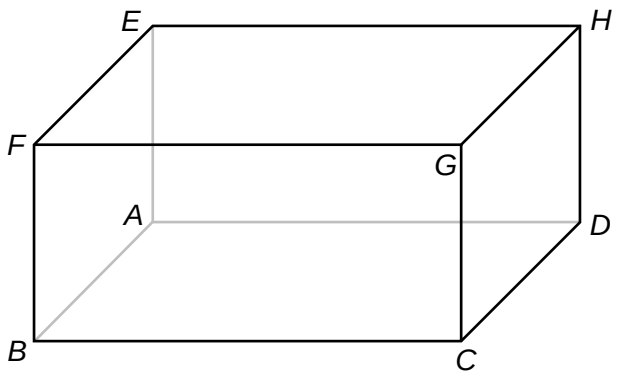
Work out the size of angle *AFM* giving your answer to 1 decimal place. **[6 marks]**

Answer _____ °

Solutions

13 Here is a cuboid.

$CG : CD : CB = 1 : 2 : 3$
$BG = k$ cm



Show that the volume of the cuboid can be written in the form $\frac{3\sqrt{a}}{b}k^3$ where a and b are integers.

[6 marks]

12

Solutions