11. The table shows some of the values of $y = 2x^3 - 3$ for values of x from -2 to 2.

(a) Complete the table by finding the values of y for $x = -2$.

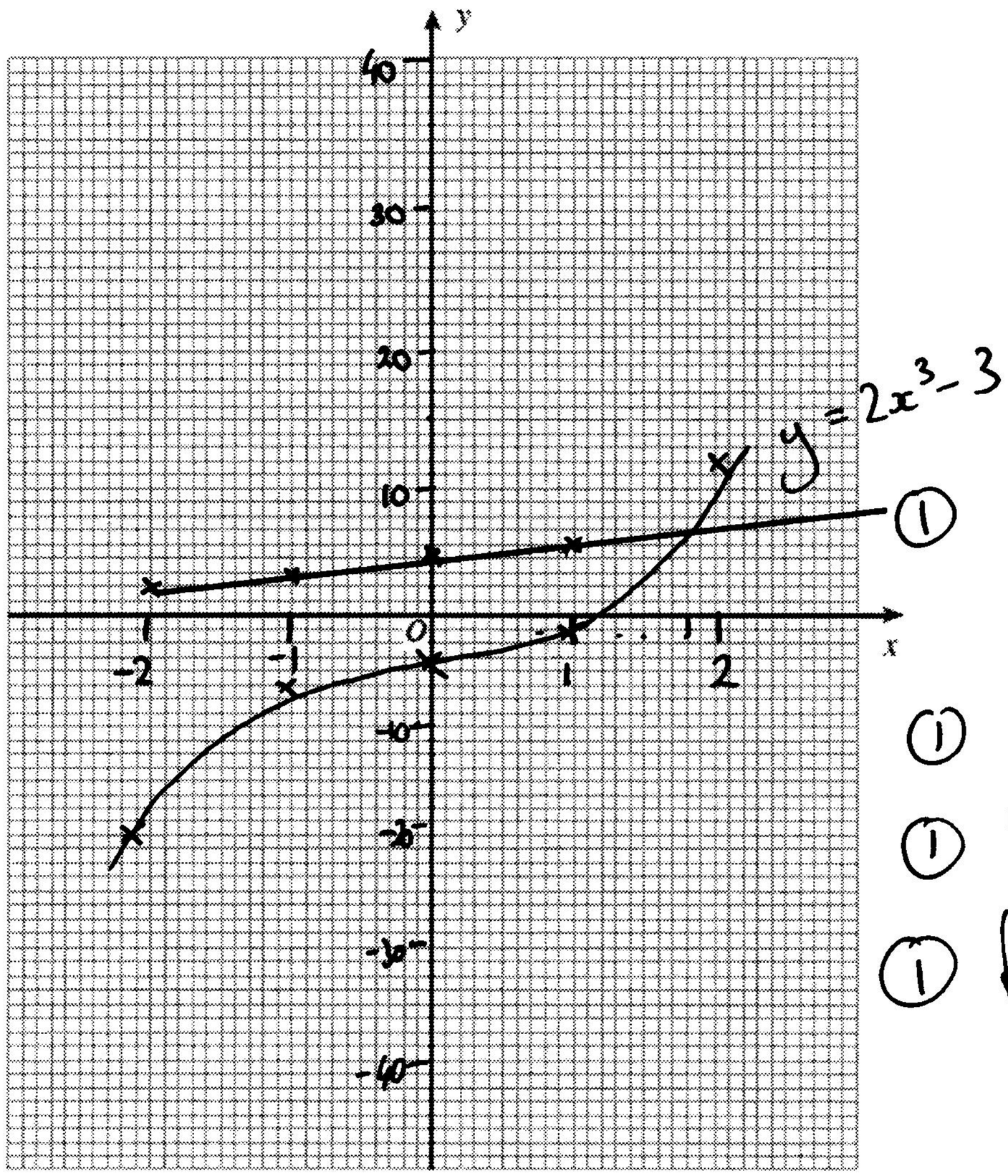
x	-2	-1	0	1	2
$y = 2x^3 - 3$	-19	-5	-3	-1	13

1

[1]

(b) On the graph paper below, draw the graph of $y = 2x^3 - 3$ for values of x between -2 and 2.

[3]



1 for points

1 for a scale

1 for curve

(c) Write down the coordinates of the point of intersection of $y = 2x^3 - 3$ with the line $y = x + 4$.

$x = 1.8$ 1

[2]

ANSWERS

Pythagoras – Past Paper Questions

(b)

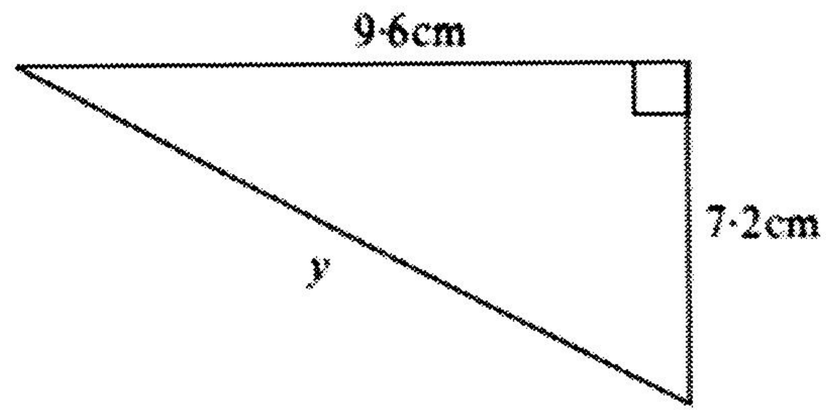


Diagram not drawn to scale

Calculate the length of the side marked y.

$y^2 = 9.6^2 + 7.2^2$ (1)

$y^2 = 144$ (1)

$\therefore y = 12\text{cm}$ (1)

[3]

8. (a)

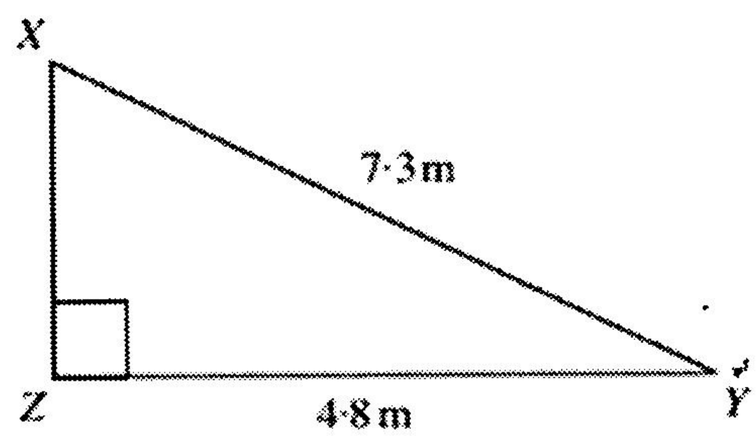


Diagram not drawn to scale.

XYZ is a right-angled triangle in which $XY = 7{\cdot}3$ m and $ZY = 4{\cdot}8$ m. Calculate the length of XZ.

$XZ^2 = 7.3^2 - 4.8^2$ (1)

$XZ^2 = 30.25$ (1)

$XZ = 5.5\text{cm}$ (1)

[3]

7. A prism has a uniform cross-section in the shape of a right-angled triangle ABC.

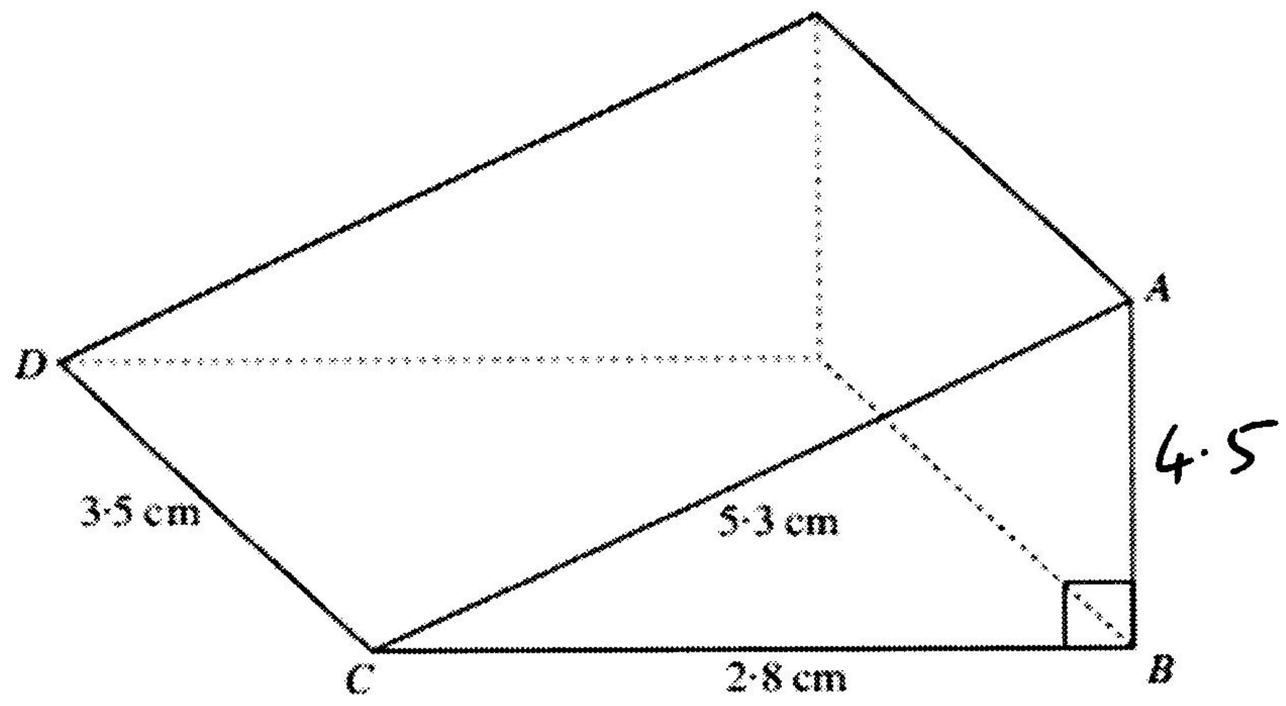


Diagram not drawn to scale.

Given that $A\hat{B}C = 90°$, $CB = 2{\cdot}8$ cm, $CA = 5{\cdot}3$ cm and that the length, CD, of the prism is $3{\cdot}5$ cm, calculate the volume of the prism.

$AB^2 = 5{\cdot}3^2 - 2{\cdot}8^2$ (1)

$AB^2 = 20{\cdot}25$ (1)

$AB = 4{\cdot}5$ (1)

$\therefore$ Volume is $\frac{1}{2} \times 4{\cdot}5 \times 2{\cdot}8 \times 3{\cdot}5$ (1)

$= 22{\cdot}05$ (1) cm^3 (1)

[6]