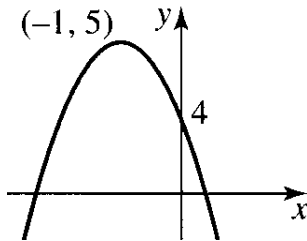


Q1 Sketch the following graphs, showing clearly the x -intercepts, y -intercept, coordinates of the turning point and write down the equation of the line of symmetry.

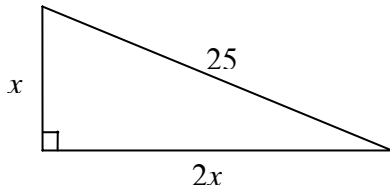
(a) $y = 2x^2 - 10x + 8$ [4]

(b) $y = -x^2 - 6x - 5$ [4]

Q2 Find the equation of the following quadratic curve given the y -intercept and the coordinate of the turning point. Show your working clearly. [3]

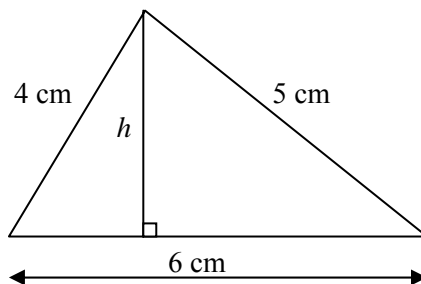


Q3 Find the value of x . [2]



Q4 The lengths of the sides of a right-angled triangle are $(14 - x)$ cm, $(13 - x)$ cm and $(6 - x)$ cm. Calculate the value of x . [4]

Q5 A triangle has sides of lengths 4 cm, 5 cm and 6 cm. Find the length of the altitude drawn to the side of length 6 cm. [4]



- Q6** (i) Given the equation $y = -3 + 2x$, find the value of a . [1]

x	-1	0	4
y	a	-3	5

- (ii) Draw the straight line that represents the equation $y = -3 + 2x$ and label the graph clearly. [2]
- (iii) On the *same axes* as (ii), draw the line $y = 5$ and write down the coordinate of the point where the line $y = -3 + 2x$ meets the line $y = 5$. [2]

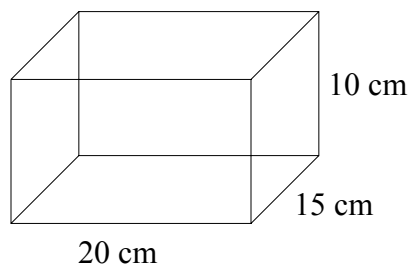
- Q7** The equation of a line L_1 is $3y - x = 9$.

- (a) Write down the coordinates of the point where the line intersects the y -axis. [1]
- (b) Write down the equation of L_2 which is parallel to the line L_1 and which passes through the point $(0, -5)$. [1]

- Q8** Simplify $\frac{(16x^4y^2)^{\frac{1}{2}}}{12x^3y^5} \div \frac{(3x^2y^3)^{-2}}{x^{-2}y^{-4}}$, giving your answer in *positive indices* only. [4]

- Q9** Solve the equation $64 = 512^{x-1}$. [2]

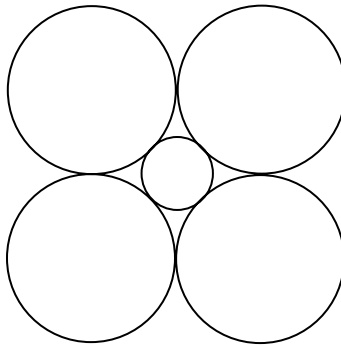
- Q10** The diagram shows a rectangular metal pencil box. Find the length of the longest pen that can be placed in the box. [2]



- Q11** Four identical coins and a smaller coin are arranged such that the centres of the four identical coins form the corners of a square. If the radius of each of the larger coins is

2 cm, find the radius of the smaller coin.

[4]



Bonus

Q12 The diagram shows a square $ABCD$ with side length 2 cm and a semi-circle with centre G and diameter AB . E is a point on AD and CE touches a point F on the circumference of the semi-circle as shown. Given that angle CFG is 90° , find the length of CE .

