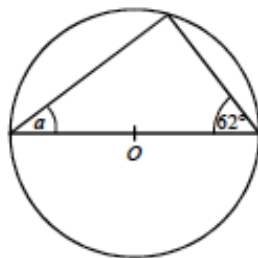


## Revision F5 (Topics 20-22) [27]

1.

- (a) In the diagram,  $O$  is the centre of the circle.

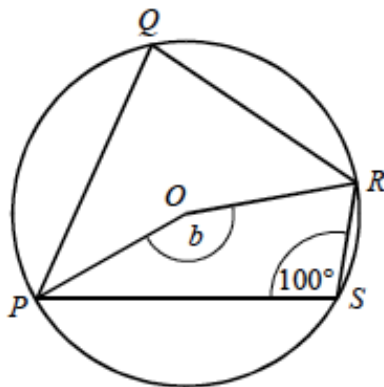


Not drawn accurately

Calculate the value of  $a$ .

(2)

- (b) In the diagram below,  $O$  is the centre of the circle and angle  $PSR = 100^\circ$ .

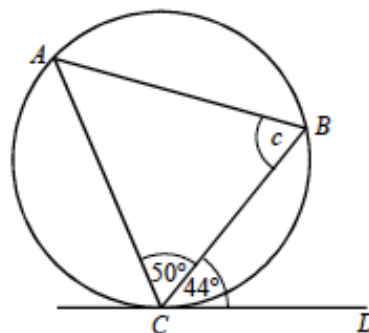


Not drawn accurately

Calculate the value of  $b$ .

(2)

- (c)  $CD$  is a tangent to the circle at  $C$ .



Not drawn accurately

Calculate the value of  $c$ . Give reasons for your answer.

(3)

(Total 7 marks)

2. **Non-calculator**

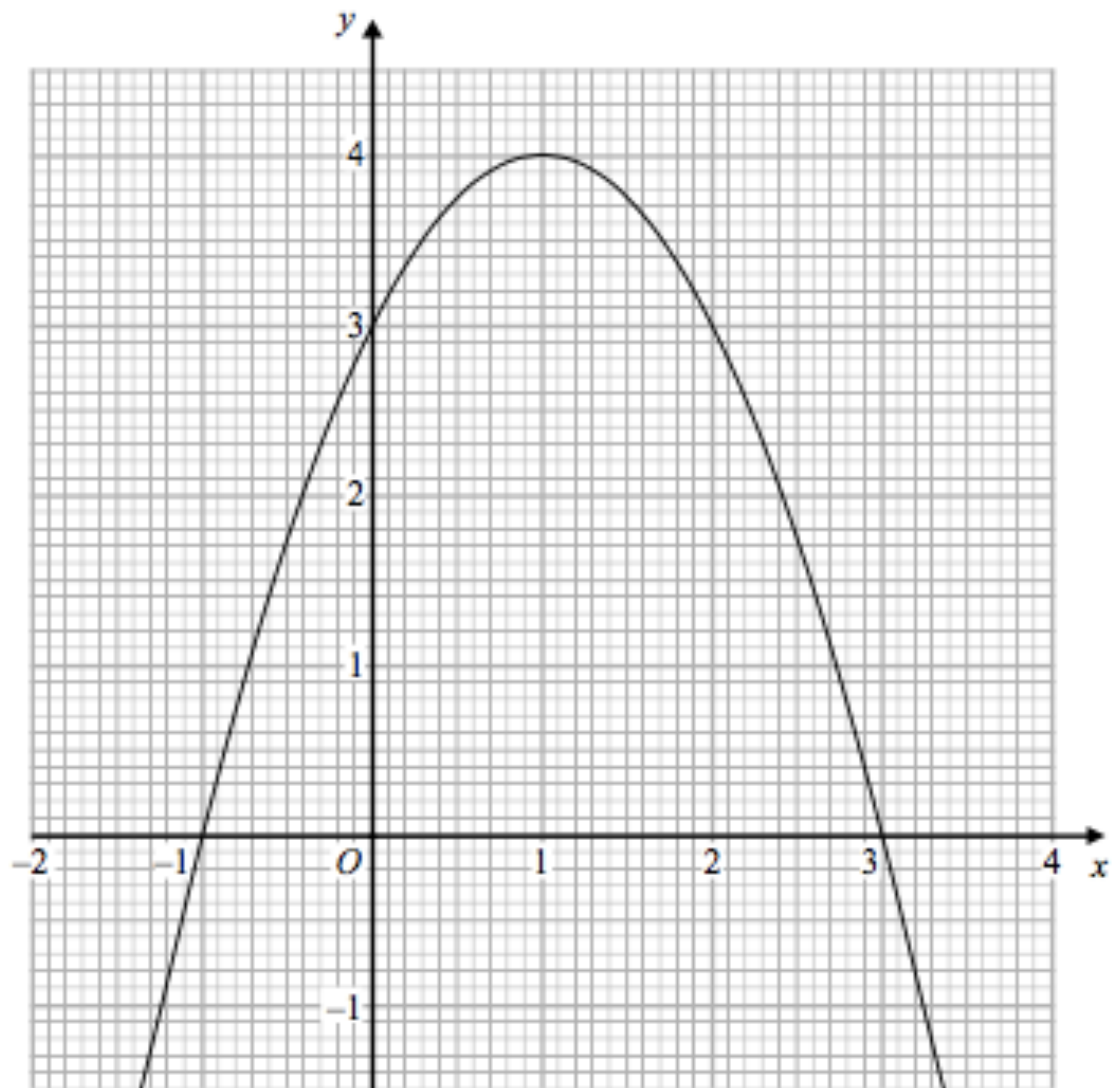
Solve  $x^2 - 6x - 8 = 0$

Write your answer in the form  $a \pm \sqrt{b}$  where  $a$  and  $b$  are integers.

(Total 3 marks)

3.

The graph of  $y = f(x)$  is drawn on the grid.



(a) Write down the coordinates of the turning point of the graph.

(b) Write down the roots of  $f(x) = 2$

(c) Write down the value of  $f(0.5)$

(Total 3 marks)

4.

Solve the simultaneous equations

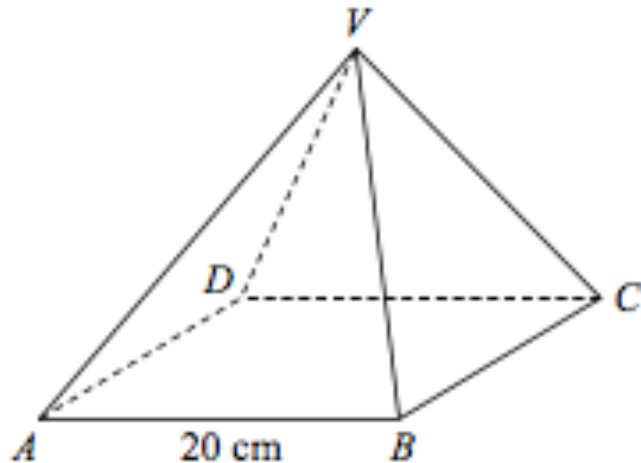
$$\begin{aligned}y &= x + 2 \\ y &= 3x^2\end{aligned}$$

You **must** show your working. Do **not** use trial and improvement.

(Total 5 marks)

5.

$VABCD$  is a solid pyramid.



$ABCD$  is a square of side 20 cm.

The angle between any sloping edge and the plane  $ABCD$  is  $55^\circ$

Calculate the surface area of the pyramid.

Give your answer correct to 2 significant figures.

(Total 5 marks)

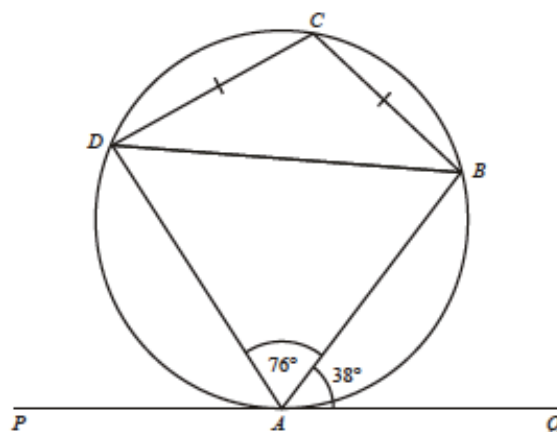
6.

$ABCD$  is a cyclic quadrilateral.

$PAQ$  is a tangent to the circle at  $A$ .

$BC = CD$

Angle  $QAB = 38^\circ$  and angle  $BAD = 76^\circ$



Not drawn accurately

Show that  $AD$  is parallel to  $BC$ .

Give reasons to justify any values you write down or calculate.

(Total 4 marks)