**Question 1 (3 Marks)**

Given that $x^2 - 6x + 1 = (x - a)^2 - b$ for all values of $x$,

(i) find the value of $a$ and the value of $b$.

$a =$ .....

$b =$ .....

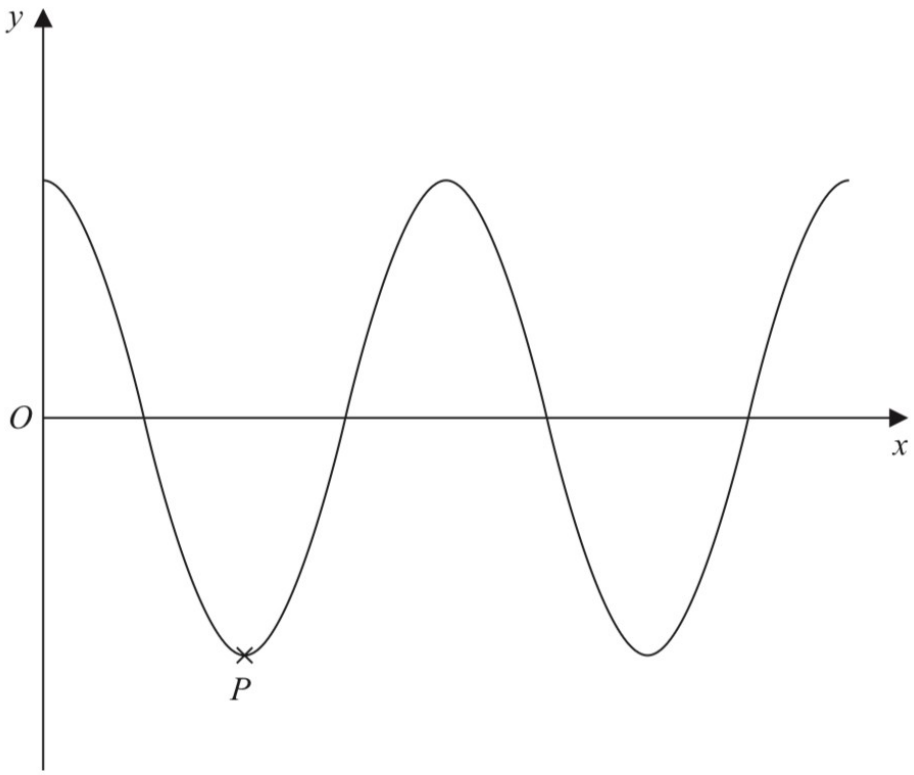
**(2)**

(ii) Hence write down the coordinates of the turning point on the graph of $y = x^2 - 6x + 1$

(..... , .....)

**(1)**

**Question 2 (2 Marks)**




The diagram shows a sketch of part of the curve with equation $y = \cos x°$
$P$ is a minimum point on the curve.

Write down the coordinates of $P$.

( ..... , ..... )

**Question 3 (5 Marks)**

(a) Rationalise the denominator of $\frac{22}{\sqrt{11}}$

Give your answer in its simplest form.

.....

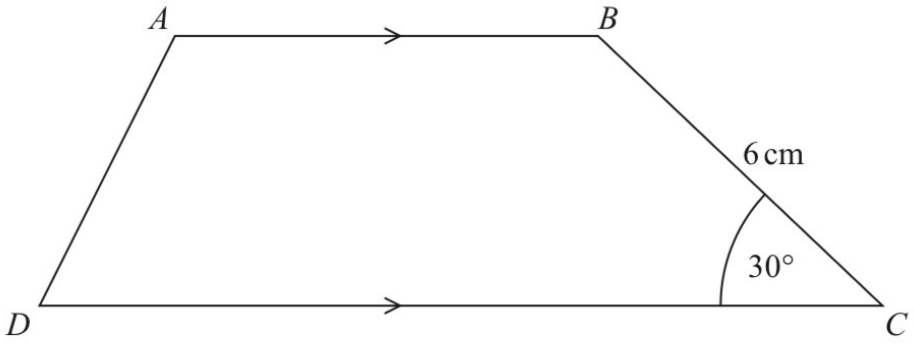
**(2)**

(b) Show that $\frac{\sqrt{3}}{2\sqrt{3}-1}$ can be written in the form $\frac{a+\sqrt{3}}{b}$ where $a$ and $b$ are integers.

**(3)**

**Question 4 (5 Marks)**

Here is trapezium $ABCD$.




The area of the trapezium is $66\,cm^2$

the length of $AB$ : the length of $CD = 2 : 3$

Find the length of $AB$.

..... cm



**(Total 15 Marks)**