

4.

The value of x is 50% **more** than the value of t .
The value of y is 10% **less** than the value of w .

$$x = y$$

Work out $\frac{t}{w}$

Give your answer as a decimal.

.....

.....

.....

.....

.....

.....

.....

.....

$$\frac{t}{w} = \dots\dots\dots (4 \text{ marks})$$

5.

Solve $\sqrt{(33 + \sqrt{x})} = 6$

.....

.....

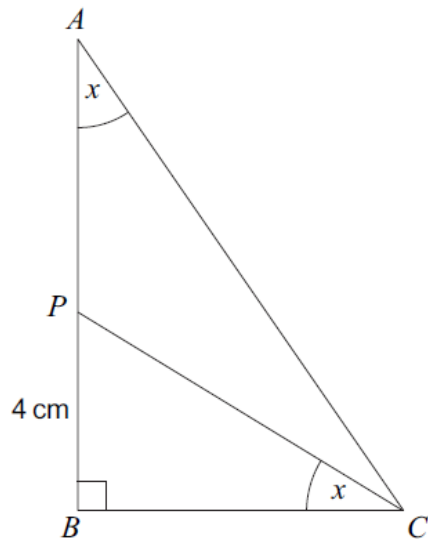
.....

.....

$$x = \dots\dots\dots (3 \text{ marks})$$

6.

ABC is a right-angled triangle.
 P is a point on AB .



Not drawn
accurately

$BP = 4 \text{ cm}$ and $\tan x = \frac{2}{3}$

(a) Work out the length of BC .

.....
.....
.....

Answer cm (2 marks)

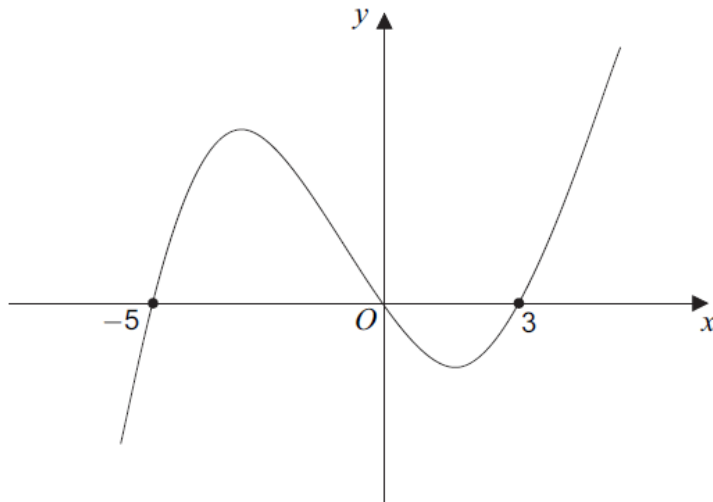
(b) Work out the length of AP .

.....
.....
.....
.....
.....
.....

Answer cm (3 marks)

7.

Here is a sketch of a cubic function $y = f(x)$



(a) Use the sketch to write down the **three** linear factors of $f(x)$.

Answer.....,, (2 marks)

(b) You are given that $f(x) = x^3 + bx^2 + cx$

Work out the values of b and c .

.....
.....
.....
.....
.....
.....
.....
.....
.....

$b =$, $c =$ (2 marks)

9.

Make x the subject of the formula $\frac{a + 2x}{a - x} = n$

.....
.....
.....
.....
.....
.....
.....
.....
.....

Answer..... (4 marks)

10.

Solve $y(\sqrt{3} - 1) = 8$

Give your answer in the form $a + b\sqrt{3}$ where a and b are integers.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

$y =$ (4 marks)

11.

(a) Show that $(x + 7)^2 - (x - 3)^2$ simplifies to $20(x + 2)$

.....
.....
.....
.....
.....
.....
.....
.....

(3 marks)

(b) Hence, or otherwise, work out $107^2 - 97^2$

.....
.....
.....

Answer..... (2 marks)

