1 Work out the **two** roots of $(7x + 1)(2x - 3) = 0$

Circle **both** roots.

[1 mark]

$-\frac{1}{7}$ $\frac{1}{7}$ $-\frac{3}{2}$ $\frac{3}{2}$

2 The **only** solution to $x^2 + bx + c = 0$ is $x = 5$

Work out the values of b and c.

[2 marks]

$b =$ _____ $c =$ _____

3 $(x + a)(x + 3a) \equiv x^2 + bx + 75$

Work out the **two** possible values of b.

[3 marks]

Answer _____ and _____

4 The flight of a plane was in two stages.

The table shows information about the flight.

	Distance (miles)	Speed (mph)	Time (hours)
1st stage	731	x	$\frac{731}{x}$
2nd stage	287	$x - 24$	$\frac{287}{x - 24}$

In total, the flight lasted 2 hours.

Work out the value of x.

[5 marks]

Answer _____

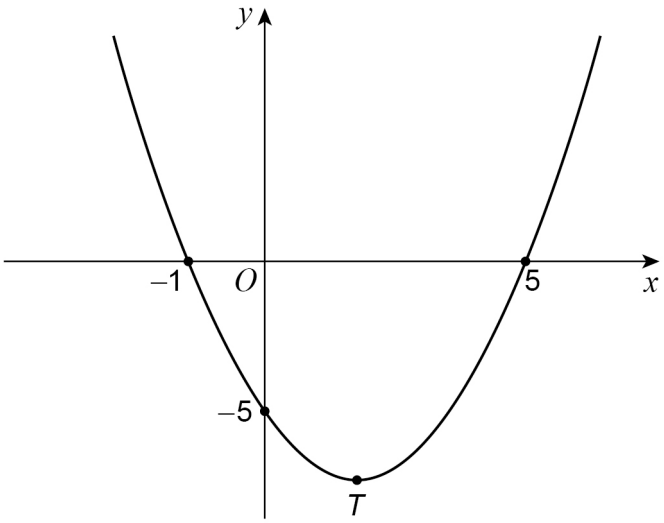
5 Solve $x^2 + 7x - 11 = 0$

Give your solutions as decimals.

[2 marks]

Answer _____

6 Here is a sketch of the curve $y = x^2 - 4x - 5$



6 (a) Write down the **two** roots of $x^2 - 4x - 5 = 0$

[1 mark]

Answer _____ and _____

7 $f(x) = x^2 + 6x$

$g(x) = 2x + 4$

7 (a) Solve $fg(x) = -5$

[3 marks]

Answer _____

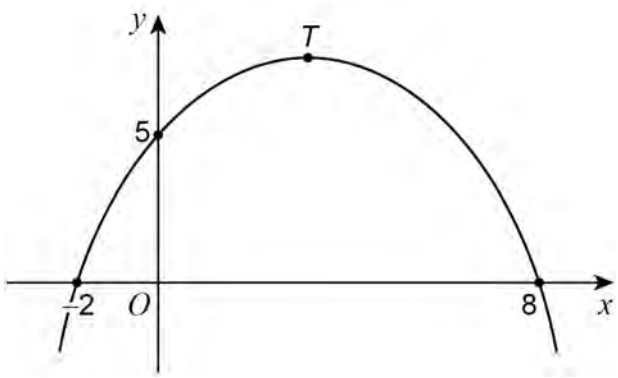
8 The only solution to $x^2 + bx + c = 0$ is $x = -15$

Work out the values of b and c.

[3 marks]

$b =$ _____ $c =$ _____

9 (a) Here is a sketch of a quadratic graph.



Complete the following statements.

[2 marks]

The value of the ***y*-intercept** is _____

The ***x*-coordinate** of the turning point, *T*, is _____