

# Algebra Toolkit

## Question Paper

Course	Edexcel IGCSE Maths
Section	2. Equations, Formulae & Identities
Topic	Algebra Toolkit
Difficulty	Hard

**Time allowed:** 30  
**Score:** /22  
**Percentage:** /100

### Question 1

$$y = p - 2qx^2$$

$$p = -10$$

$$q = 3$$

$$x = -5$$

Work out the value of  $y$ .

[2 marks]

### Question 2

$$\frac{a}{b} = 3c$$

$$\frac{b}{c} = 2$$

Work out the value of  $a$  when  $c = 8$

[3 marks]

### Question 3

$a$  and  $b$  are positive values.

Show that  $\frac{7a+2b-3a}{8a+6b+2a-b}$  always simplifies to the same value.

[3 marks]

**Question 4**

Work out the values of  $a$  and  $b$  in the identity

$$5(7x + 8) + 3(2x + b) \equiv ax + 13$$

$$a = \dots\dots\dots b = \dots\dots\dots$$

[4 marks]

**Question 5**

Amy has  $x$  beads.

Billy has three more beads than Amy.

Carly has four times as many beads as Billy.

Circle the expression for the number of beads that Carly has.

$$4x + 3$$

$$3x + 4$$

$$4(x + 3)$$

$$x + 12$$

[1 mark]

**Question 6**

$$y = x^4 - 4x^3$$

Find the value of  $y$  when  $x = -1$ .

$y = \dots\dots\dots$

[2 marks]

**Question 7**

$$s = ut + \frac{1}{2} at^2$$

Find  $s$  when  $t = 26.5$ ,  $u = 104.3$ ,  $a = -2.2$ .

Give your answer in standard form, correct to 4 significant figures.

$s = \dots\dots\dots$

[4 marks]

**Question 8a**

One solution of the equation  $ax^2 + a = 150$  is  $x = 7$ .

Find the value of  $a$ .

$a = \dots\dots\dots$

[2 marks]

**Question 8b**

Find the other solution.

$x = \dots\dots\dots [1]$

**[1 mark]**