

# Solving Equations with an Unknown on Both Sides

## Question Paper

<b>Level</b>	OCR
<b>Subject</b>	Maths
<b>Exam Board</b>	GCSE (9-1)
<b>Topic</b>	Algebra
<b>Sub Topic</b>	Solving Equations with an Unknown on both sides
<b>Grade Level</b>	Grade 3
<b>Booklet</b>	Question Paper

**Time Allowed:** 26 minutes

**Score:** /21

**Percentage:** /100

- 1 (a) Find the values of  $a$  and  $b$  so that this is an identity.

$$5x + 3(x + 1) \equiv ax + b$$

(a)  $a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_ [2]

- (b) Find possible values of  $c$  and  $d$  so that this is an equation with the solution  $x = 2$ .

$$5x + 3(x + 1) = cx + d$$

(b)  $c =$  \_\_\_\_\_

$d =$  \_\_\_\_\_ [2]

2 (a) Solve this equation.

$$5x - 4 = 3x + 7$$

(a) ..... [3]

(b) Here are the first four terms of a sequence.

4            7            10            13

Find an expression for the  $n$ th term of this sequence.

(b) ..... [2]

**3 (a)** Solve this equation.

$$5x - 4 = 3x + 7$$

**(a)** ..... [3]

**(b)** Factorise fully.

$$7y^2 - 14y$$

**(b)** ..... [2]

- 4 (a) Find the values of  $a$  and  $b$  so that the following is an identity.

$$2x + a(3x + 5) \equiv bx + 30$$

(a)  $a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_ [3]

- (b) Rearrange this formula to make  $p$  the subject.

$$H = \sqrt{\frac{10p^3}{c}}$$

(b) \_\_\_\_\_ [4]