

Name	
Date	

**Section 1:**  
**use simple formulae**

**1** Look at this equation.

$$2a + b = 20$$

Complete these statements.

One has been done for you.

When a = <input type="text" value="1"/>	b = <input type="text" value="18"/>
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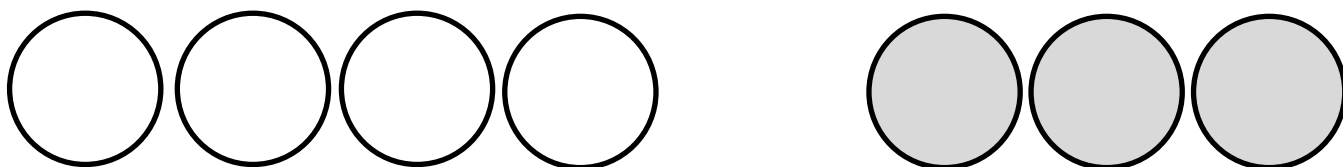
When a = <input type="text" value="3"/>	b = <input type="text"/>
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When a = <input type="text" value="7"/>	b = <input type="text"/>
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When a = <input type="text"/>	b = <input type="text" value="2"/>
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3 marks

2 Eve has two different types of coins in her pocket.



She has four coins of one type and three coins of another type.

Altogether she has 95p.

What two types of coins does she have?

She has 4  p coins and 3  p coins.

1 mark

3 Look at these equations.

$$a + b = 10$$

$$a \times b = 21$$

$$a = b + 4$$

a and b are both whole numbers.

Work out the values of a and b.

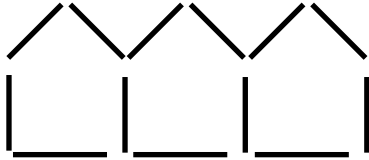
$$a = \boxed{\phantom{00}}$$

$$b = \boxed{\phantom{00}}$$

1 mark

**Section 2:****generate and describe linear number sequences**

**4** Zac used matchsticks to make a pattern that looked like a row of houses.



He made a table to show how many matchsticks ( $m$ ) he had used to make each house ( $h$ ).

Complete the table.

Number of houses ( $h$ )	1	2	3	4	5
Number of matchsticks ( $m$ )	5	9	13		

\_\_\_\_\_

2 marks

He made a row of **ten houses**.

How many **matchsticks** did he use?

\_\_\_\_\_

1 mark

Tick the equation which shows the relationship between  $h$  and  $m$ .

$$m = h + 4$$

$$m = 4h + 1$$

$$m = 5h$$

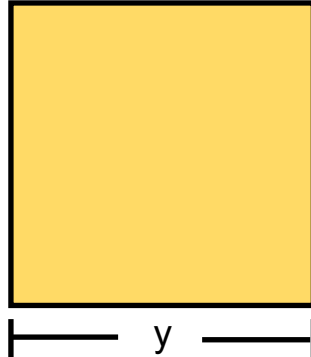
$$h = 4m + 1$$

\_\_\_\_\_

1 mark

**Section 3:****express missing number problems algebraically**

**5** Here is a square. The length of each side is  $y$ .



Tick **all** the correct statements.

The perimeter of the square is  $4y$

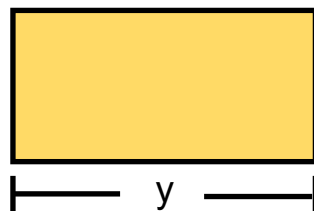
The area of the square is  $4y$

The area of the square is  $y^2$

The perimeter of the square is  $y^2$

2 marks

The square is cut in **half**.



What is the perimeter of the new shape?

Perimeter =

1 mark

**Section 4:**

find pairs of numbers that satisfy an equation with two unknowns

**6**

Write possible values for each equation.

$$a + b = 1000$$

a = b = 

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1 mark

$$c \times d = 320$$

c = d = 

---

1 mark

$$e - f = 72$$

e = f = 

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1 mark**7** Monty and Archie count the money in their pockets.

They have £1 between them.

Monty has 10p more than Archie.

How much money does Archie have?

 p

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1 mark

**Section 5:**

enumerate possibilities of combinations of two variables

- 8 Sophia looks in her purse. She only has 10p coins and 5p coins. She buys a drink for **40p**.



How many different ways are there for her to pay? Show them all.

different ways

2 marks

- 9 Every week Class 6 take a spelling test. There are always 16 questions. Adam says, "This week I got three times more right than last week".

How many questions could Adam have got right **this week**?

Write all the possibilities.

2 marks