

Q1.

Look at these equations.

$$a = 2b$$

$$b = 3c$$

Which equation below is also true?

Put a ring round the correct one.

$$b = 2a \quad a = 2b + 3c \quad a = 5c$$

$$a = 6c \quad a + b = 5$$

1 mark

Q2.

Here are three equations.

$$a + b + c = 30$$

$$a + b = 24$$

$$b + c = 14$$

What are the values of a , b and c ?

2 marks

Q3.

Here is an equation.

$$m - 2n = 10$$

When $n = 20$ what is the value of m ?

$$m = \underline{\hspace{2cm}}$$

1 mark

When $m = 20$ what is the value of n ?

$$n = \underline{\hspace{2cm}}$$

1 mark

Q4. j and k stand for two numbers.Double j equals half of k .

Write numbers to complete the sentence below.

When j isthen k is

1 mark

Q5.

x stands for an **odd** number.

y stands for an **even** number.

Look at the expressions below.

For each expression, tick to show if it is odd or even.

The first one is done for you.

	odd	even
$x + y$	☒	☐
$x + 2y$	☐	☐
$2(x + y)$	☐	☐
xy	☐	☐
$x^2 + y$	☐	☐

2 marks

Q6.

Solve this equation to find the value of y .

$$8(y + 12) = 100$$



Q7.

n stands for a whole number.

$2n$ is greater than 30

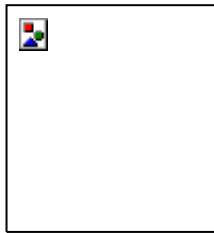
$5n$ is less than 100

Write **all** the numbers that n stands for.

2 marks

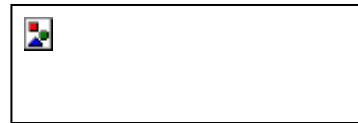
Q8.

(a) There are n counters in Alfie's bag.



Alfie puts **3** more counters in the bag.

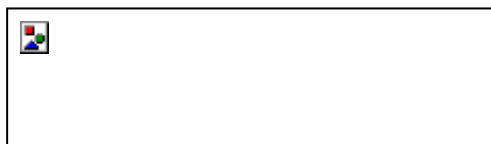
Write an expression for the number of counters that are in the bag now.



1 mark

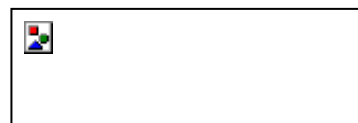
(b) Megan has two boxes.

There are m counters in each box.



She puts all her counters together in a pile, then removes **5** of them.

Write an expression for the number of counters that are in the pile now.



1 mark

Q9.Write the missing numbers so that $2a + 5b = 30$

One is done for you.

$$2a + 5b = 30 \quad \text{when} \quad a = 0 \quad \text{and} \quad b = \underline{6}$$

$$2a + 5b = 30 \quad \text{when} \quad a = 5 \quad \text{and} \quad b = \underline{\hspace{2cm}}$$

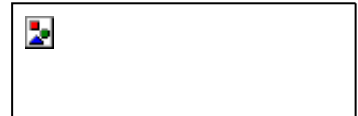
1 mark

$$2a + 5b = 30 \quad \text{when} \quad a = 15 \quad \text{and} \quad b = \underline{\hspace{2cm}}$$

1 mark

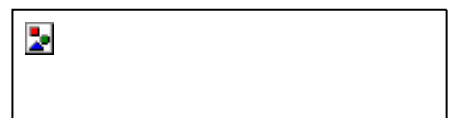
Q10.

$$n = 22$$

What is $2n + 9$?A rectangular box for the answer, with a small icon in the top-left corner.

1 mark

$$2q + 4 = 100$$

Work out the value of q .A rectangular box for the answer, with a small icon in the top-left corner.

1 mark

Q11.

g stands for a number on a grey card.

w stands for a number on a white card.

Join all pairs of numbers that match this rule:

$$2g + w = 10$$

One is done for you.



2 marks

Q12.

Here is an equation.

$$k = 100 - 4n$$

(a) Find the value of k when $n = 60$

1 mark

(b) Find the value of n when $k = 99$



1 mark

M1. Equation circled as shown:

$$b = 2a \quad a = 2b + 3c \quad a = 5c$$



$$a + b = 5$$

Accept unambiguous indication

[1]

M2. Gives all three correct values, ie

$$a = 16, b = 8, c = 6$$

2

Gives at least one correct value

or

Gives three values that satisfy the second and third equations

eg

- $a = 18, b = 6, c = 8$ (satisfies $a + b = 24$ and $b + c = 14$: note that $a - c = 10$)

1

[2]

M3.(a) 50

1

(b) 5

1

[2]

M4. Two numbers where the value of k is four times the value of j , eg

When j is	5	When k is	20
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- odd even



- 'y' or 'x' for ticked in each row

2

Makes three correct decisions

1

[2]

M6.  or equivalent

Accept equivalent fractions or decimals

2

Shows or implies a correct first step of algebraic manipulation that

either reduces the number of terms **or** collects variables on one side of the equation and numbers on the other **or** correctly removes the brackets, eg:

- $8y + 96 = 100$
- $y + 12 = 100 \div 8$
- $8y = 4$

OR

Shows or implies a complete correct method, eg:

- $100 \div 8 = 12$ (error)
 $12 - 12 = 0$
- $25 \times 4 = 100$
 $12.5 \times 8 = 100$
 $12.5 - 12$

1

Do not accept a first step of algebraic manipulation which has a conceptual error, eg:

- $y + 12 = 100$
- $y + 96 = 100$
- $8y + 12 = 100$

! Correct embedded solutions

Award 1m for a response which shows , or equivalent, as the embedded solution to their working

[2]

M7. Award **TWO** marks for four numbers correct as shown:

16 **AND** 17 **AND** 18 **AND** 19

If the answer is incorrect, award **ONE** mark for:

- three numbers correct and none incorrect

OR

- all four numbers correct and one incorrect
Numbers may be given in any order.

Up to 2m
U1

[2]

M8.(a) $n + 3$ or $3 + n$

! Algebra

! Alternative letter used, eg, for part (a), accept m used instead of n , if the expression is otherwise correct:

- $m + 3$

1

(b) $2m - 5$

! Condone unsimplified or unconventional algebra, eg, for part (b):

- $m + m - 5$
- $m2 - 5$

1

[2]

M9.(a) 4

! Algebra

1

(b) 0

1

[2]

M10.

(a) 53

1

(b) 48

1

[2]

M11. Draws the three correct lines and no incorrect lines, ie:



*! Lines do not touch the shapes
Accept provided the intention is clear*

2

or

Draws two correct lines and no incorrect lines

OR

Draws the three correct lines and one incorrect line

1

[2]

M12.(a) -140

1

(b) 0.25 or 

*Accept equivalent fractions or decimals
Do not accept embedded solutions*

1

[2]