

## Solving Equations-Questions

Key Stage 3: 2003 Paper 1 Level 3-5

1.

---

14. Simplify these expressions.



$$5k + 7 + 3k = \dots\dots\dots$$

.....  
1 mark

$$k + 1 + k + 4 = \dots\dots\dots$$

.....  
1 mark

2.

21. Solve these equations.



$$8k - 1 = 15$$

$$k = \dots\dots\dots$$

.....  
1 mark

$$2m + 5 = 10$$

$$m = \dots\dots\dots$$

.....  
1 mark

Key Stage 3:2003 Paper 2 Level 3-5

3.

14. (a) It is Tina's birthday. We do not know how old Tina is.

Call **Tina's age**, in years,  $n$

The expressions below compare Tina's age to some other people's ages.

Use words to compare their ages. The first one is done for you.

Tina's age	$n$
Ann's age	$n + 3$

Ann is 3 years older than Tina

Tina's age	$n$
Barry's age	$n - 1$

 Barry is .....

Tina's age	$n$
Carol's age	$2n$

 Carol is .....

.....  
.....  
2 marks

(b) In one year's time Tina's age will be  $n + 1$

Write **simplified expressions** to show the ages of the other people in one year's time.

	Tina	Ann	Barry	Carol
Age now	$n$	$n + 3$	$n - 1$	$2n$
Age in one year's time	$n + 1$	.....	.....	.....



.....  
.....  
2 marks

---

(c) When  $n = 30$ , find the value of  $2n + 1$



1 mark

When  $n = 30$ , find the value of  $2(n + 1)$



1 mark

Key Stage 3: 2003 Paper 1 Level 4-6

4.

9. Simplify these expressions.



$$5k + 7 + 3k = \dots\dots\dots$$

1 mark

$$k + 1 + k + 4 = \dots\dots\dots$$

1 mark

5.

16. Solve these equations.  
Show your working.



$$8k - 1 = 15$$

$$k = \dots\dots\dots$$

1 mark

$$2m + 5 = 10$$

$$m = \dots\dots\dots$$

1 mark

$$3f + 4 = f + 13$$

$$f = \dots\dots\dots$$

2 marks

7. (a) It is Tina's birthday. We do not know how old Tina is.

Call **Tina's age**, in years,  $n$

The expressions below compare Tina's age to some other people's ages.

Use words to compare their ages. The first one is done for you.

Tina's age	$n$
Ann's age	$n + 3$

Ann is *3 years older than Tina*

Tina's age	$n$
Barry's age	$n - 1$

 Barry is .....

Tina's age	$n$
Carol's age	$2n$

 Carol is .....

.....

.....

2 marks

- (b) In one year's time Tina's age will be  $n + 1$

Write **simplified expressions** to show the ages of the other people in one year's time.

	Tina	Ann	Barry	Carol
Age now	$n$	$n + 3$	$n - 1$	$2n$
Age in one year's time	$n + 1$	.....	.....	.....



.....

.....

2 marks

---

(c) When  $n = 30$ , find the value of  $2n + 1$



.....

1 mark

When  $n = 30$ , find the value of  $2(n + 1)$



.....

1 mark

Key Stage 3: 2004 Paper 1 Level 3-5


7.

18. One way to make a magic square is to substitute numbers into this algebra grid.

$a + b$	$a - b + c$	$a - c$
$a - b - c$	$a$	$a + b + c$
$a + c$	$a + b - c$	$a - b$

- (a) Complete the magic square below using the values

$$a = 10 \quad b = 3 \quad c = 5$$



		5
	10	
15		

2 marks

(b) Here is the algebra grid again.

$a + b$	$a - b + c$	$a - c$
$a - b - c$	$a$	$a + b + c$
$a + c$	$a + b - c$	$a - b$

I use **different values** for  $a$ ,  $b$  and  $c$  to complete the magic square.

20	21	7
3	16	29
25	11	12

What values for  $a$ ,  $b$  and  $c$  did I use?

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

.....  
.....  
2 marks



4. Work out the values of  $a$ ,  $b$  and  $c$  in the number sentences below.



$$3 \times 10 + 4 = a$$

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

1 mark

$$3 \times 10 + b = 38$$

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

1 mark

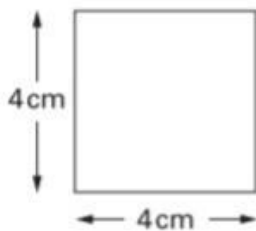
$$c \times 10 + 12 = 52$$

$$c = \dots\dots\dots$$

1 mark

9.

21. The square and the rectangle below have the **same area**.



Not drawn

Work out the value of  $y$



$$y = \dots\dots\dots \text{ cm}$$

1 mark

Key Stage 3: 2004 Paper 1 Level 4-6


10.

13. One way to make a magic square is to substitute numbers into this algebra grid.

$a + b$	$a - b + c$	$a - c$
$a - b - c$	$a$	$a + b + c$
$a + c$	$a + b - c$	$a - b$

(a) Complete the magic square below using the values

$$a = 10 \quad b = 3 \quad c = 5$$



		5
	10	
15		

QUESTION

ANSWER

2 marks

(b) Here is the algebra grid again.

$a + b$	$a - b + c$	$a - c$
$a - b - c$	$a$	$a + b + c$
$a + c$	$a + b - c$	$a - b$

I use **different values** for  $a$ ,  $b$  and  $c$  to complete the magic square.

20	21	7
3	16	29
25	11	12

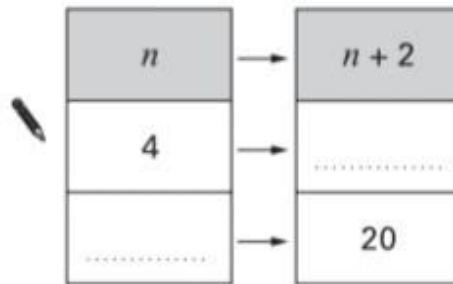
What values for  $a$ ,  $b$  and  $c$  did I use?



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

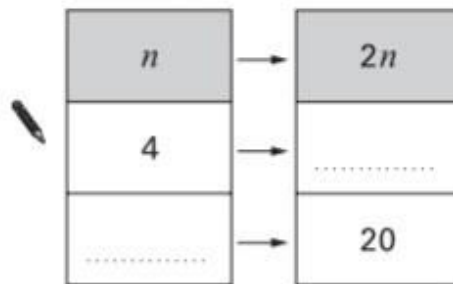
.....  
.....  
2 marks

15. (a) A function maps the number  $n$  to the number  $n + 2$   
Complete the missing values.



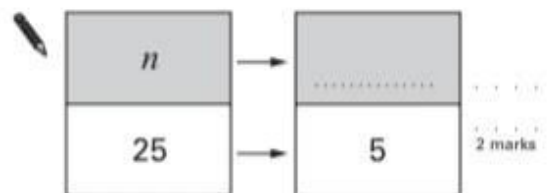
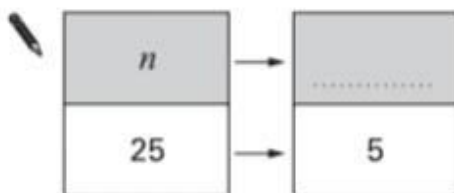
1 mark

- (b) A different function maps the number  $n$  to the number  $2n$   
Complete the missing values.



1 mark

- (c) Many different functions can map the number 25 to the number 5  
Complete the tables by writing two **different** functions.



2 marks

20. Rearrange the equations.



$$b + 4 = a$$

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

1 mark

$$4d = c$$

$$d = \dots\dots\dots$$

1 mark

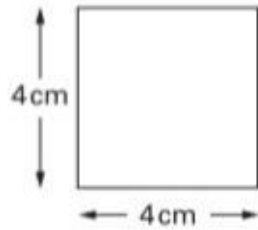
$$m - 3 = 4k$$

$$m = \dots\dots\dots$$

1 mark

Key Stage 3: 2004 Paper 2 Level 4-6

14. (a) The square and the rectangle below have the **same area**.



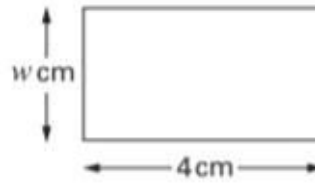
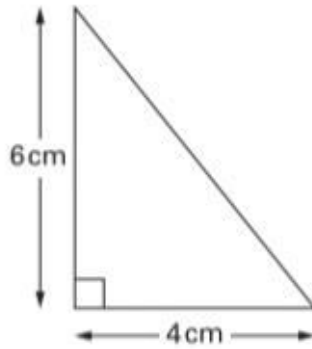
Not drawn accurately

Work out the value of  $y$

  $y = \dots\dots\dots$  cm

.....  
1 mark

(b) The triangle and the rectangle below have the **same area**.



Not drawn accurately

Work out the value of  $w$

Show your working.



$w = \dots\dots\dots$  cm

.....  
.....  
2 marks



21. Solve these equations.

$$3y + 1 = 16$$

  $y = \dots\dots\dots$

1 mark

$$18 = 4k + 6$$

  $k = \dots\dots\dots$

1 mark

Key Stage 3: 2005 Paper 1 Level 4-6

17.

11. Complete the statements below.

 When  $x$  is 8,  $4x$  is           

1 mark

When  $x$  is           ,  $4x$  is 48

1 mark

When  $x$  is 8,            is 48


1 mark

18.



14. Solve these equations.

$$3y + 1 = 16$$

  $y = \dots\dots\dots$

1 mark

$$18 = 4k + 6$$

  $k = \dots\dots\dots$

1 mark

19.

21. Solve this equation.

$$75 + 2t = 100 - 2t$$



$t = \dots\dots\dots$

2 marks

Key Stage 3: 2005 Paper 2 Level 4-6

20.

25. Look at this equation.

$$14y - 51 = 187 + 4y$$

Is  $y = 17$  the solution to the equation?



Yes

No

Show how you know.



1 mark

Key Stage 3: 2006 Paper 1 Level 3-5

21.

17. Solve these equations.

$$2k + 3 = 11$$



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

1 mark

$$2t + 3 = -11$$



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

1 mark

Key Stage 3: 2006 Paper 2 Level 3-5

22.

17. Look at the three expressions below.

$$8 + k$$

$$3k$$

$$k^2$$

When  $k = 10$ , what is the value of each expression?



$8 + k = \underline{\hspace{2cm}}$

$3k = \underline{\hspace{2cm}}$

$k^2 = \underline{\hspace{2cm}}$

          
          
2 marks

Key Stage 3: 2006 Paper 1 Level 4-6

23.

11. Solve these equations.

$$2k + 3 = 11$$



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

          
1 mark

$$2t + 3 = -11$$



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

          
1 mark

24.



11. Look at the three expressions below.

$$8 + k$$

$$3k$$

$$k^2$$

When  $k = 10$ , what is the value of each expression?



$8 + k = \underline{\hspace{2cm}}$

$3k = \underline{\hspace{2cm}}$

$k^2 = \underline{\hspace{2cm}}$

\_\_\_\_\_  
\_\_\_\_\_  
2 marks

27.

---

17. Look at this equation.

$$3a + 20 = 4a + k$$

(a) If  $a = 15$ , find the value of  $k$



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

\_\_\_\_\_  
1 mark

(b) If  $a = -15$ , find the value of  $k$



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

\_\_\_\_\_  
1 mark

Key Stage 3: 2007 Paper 1 Level 3-5

28.

16. (a) When  $x = 8$ , what is the value of  $5x$ ?

Tick (✓) the correct box below.

  5     13     40     58     None of these              
1 mark

(b) When  $x = 8$ , what is the value of  $3x - x$ ?

Tick (✓) the correct box below.

  0     3     16     30     None of these              
1 mark

(c) When  $x = 8$ , what is the value of  $x^2$ ?

Tick (✓) the correct box below.

  8     10     16     64     None of these              
1 mark

22. Look at this equation.

$$y = 2x + 10$$

(a) When  $x = 4$ , what is the value of  $y$ ?

 \_\_\_\_\_

1 mark

(b) When  $x = -4$ , what is the value of  $y$ ?

 \_\_\_\_\_

1 mark

(c) Which equation below gives the **same** value of  $y$  for both  $x = 4$  and  $x = -4$ ?

Put a ring round the correct equation.



$y = 2x$

$y = 2 + x$

$y = x^2$

$y = \frac{x}{2}$

1 mark

Key Stage 3: 2007 Paper 2 Level 3-5

30.

13. Look at this equation.

$$4 + a = b$$

Write a pair of numbers for  $a$  and  $b$  to make the equation true.

  $a = \underline{\hspace{2cm}}$      $b = \underline{\hspace{2cm}}$

          
1 mark

Now write a **different** pair of numbers for  $a$  and  $b$  to make the equation true.

  $a = \underline{\hspace{2cm}}$      $b = \underline{\hspace{2cm}}$

          
1 mark

31.

27. Solve these equations.

$$32x + 53 = 501$$

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

          
1 mark

$$375 = 37 + 26y$$

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

          
1 mark

Key Stage 3: 2007 Paper 1 Level 4-6

32.



9. (a) When  $x = 8$ , what is the value of  $5x$ ?

Tick (✓) the correct box below.



5

13

40

58

None of these

\_\_\_\_\_   
 1 mark

(b) When  $x = 8$ , what is the value of  $3x - x$ ?

Tick (✓) the correct box below.



0

3

16

30

None of these

\_\_\_\_\_   
 1 mark

(c) When  $x = 8$ , what is the value of  $x^2$ ?

Tick (✓) the correct box below.



8

10

16

64

None of these

\_\_\_\_\_   
 1 mark

15. Look at this equation.

$$y = 2x + 10$$

(a) When  $x = 4$ , what is the value of  $y$ ?

 \_\_\_\_\_ 1 mark

(b) When  $x = -4$ , what is the value of  $y$ ?

 \_\_\_\_\_ 1 mark

(c) Which equation below gives the **same** value of  $y$  for both  $x = 4$  and  $x = -4$ ?

Put a ring round the correct equation.



$y = 2x$        $y = 2 + x$        $y = x^2$        $y = \frac{x}{2}$       1 mark

34.

22. Solve this equation.

$$2(2n + 5) = 12$$



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

\_\_\_\_\_  
2 marks

Key Stage 3: 2007 Paper 2 Level 4-6

35.

6. Look at this equation.

$$4 + a = b$$

Write a pair of numbers for  $a$  and  $b$  to make the equation true.

$$a = \underline{\hspace{2cm}} \quad b = \underline{\hspace{2cm}}$$

1 mark

Now write a **different** pair of numbers for  $a$  and  $b$  to make the equation true.

$$a = \underline{\hspace{2cm}} \quad b = \underline{\hspace{2cm}}$$

1 mark

36.

20. Solve these equations.

$$32x + 53 = 501$$

  $x =$  \_\_\_\_\_ \_\_\_\_\_  
1 mark

$$375 = 37 + 26y$$

  $y =$  \_\_\_\_\_ \_\_\_\_\_  
1 mark

37.

22. Look at the information.

$$x = 4 \quad y = 13$$

Complete the rules below to show **different** ways to get  $y$  using  $x$   
The first one is done for you.

To get  $y$ , **multiply**  $x$  by 2 and **add** 5

This can be written as  $y = \underline{2x + 5}$



To get  $y$ , **multiply**  $x$  by \_\_\_\_\_ and **add** \_\_\_\_\_

This can be written as  $y = \underline{\hspace{2cm}}$

1 mark

To get  $y$ , **multiply**  $x$  by \_\_\_\_\_ and **subtract** \_\_\_\_\_

This can be written as  $y = \underline{\hspace{2cm}}$

1 mark


To get  $y$ , **divide**  $x$  by \_\_\_\_\_ and **add** \_\_\_\_\_

This can be written as  $y = \underline{\hspace{2cm}}$


1 mark

38.

24. Write the missing numbers.

  $6x + 2 = 10$   
so  $6x + 1 = \underline{\hspace{2cm}}$

1 mark

  $1 - 2y = 10$   
so  $(1 - 2y)^2 = \underline{\hspace{2cm}}$

1 mark

39.

27. (a) Here are two equations.

$$k = a + b$$
$$a + b + k = 30$$

What is the value of  $k$ ?

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

1 mark

(b) Look at this information.

$$10 = c + d$$

$c$  is one more than  $d$

What is the value of  $c$ ?

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

1 mark

Key Stage 3: 2008 Paper 1 Level 3-5

40.

21. Write **numbers** in the boxes to make the statements true.



When  $x =$   then  $x + 3 =$

When  $x =$   then  $3x =$

When  $x =$   then  $\frac{x}{3} =$

\_\_\_\_\_  
2 marks

41.

25. Find the values of  $x$

$$5x - 3 = 12$$



$x =$  \_\_\_\_\_

\_\_\_\_\_  
1 mark

$$13 + 2x = 3$$



$x =$  \_\_\_\_\_

\_\_\_\_\_  
1 mark

Key Stage 3: 2008 Paper 2 Level 3-5

42.

22. (a) Look at the equation.

$$n + 3 = 12$$

Use it to work out the value of  $n - 3$

 \_\_\_\_\_

\_\_\_\_\_ 1 mark

(b) Now look at this equation.

$$n + 3 = 7$$

Use it to work out the value of  $n - 6$

 \_\_\_\_\_

\_\_\_\_\_ 1 mark

Key Stage 3: 2008 Paper 1 Level 4-6

43.

14. Write **numbers** in the boxes to make the statements true.

 When  $x =$   then  $x + 3 =$

When  $x =$   then  $3x =$

When  $x =$   then  $\frac{x}{3} =$

\_\_\_\_\_  
\_\_\_\_\_  
2 marks

44.



17. Find the values of  $x$

$$5x - 3 = 12$$

  $x =$  \_\_\_\_\_

\_\_\_\_\_   
 1 mark

$$13 + 2x = 3$$

  $x =$  \_\_\_\_\_

\_\_\_\_\_   
 1 mark

45.

27. Find the value of  $x$

$$6 + 2x = x - 6$$



$x =$  \_\_\_\_\_

\_\_\_\_\_   
 \_\_\_\_\_   
 2 marks

Key Stage 3: 2008 Paper 2 Level 4-6

46.

14. (a) Look at the equation.

$$n + 3 = 12$$

Use it to work out the value of  $n - 3$



\_\_\_\_\_

1 mark

(b) Now look at this equation.

$$n + 3 = 7$$

Use it to work out the value of  $n - 6$



\_\_\_\_\_

1 mark

47.

20. (a) Look at the equation.

$$5x + 1 = 2x - 8$$

Complete the sentence below by ticking (✓) the correct box.

**The value of  $x$  is ...**



... one particular number.

... any number less than zero.

... any number greater than zero.

... any whole number.

... any number at all.

1 mark

(b) Now look at this equation.

$$y = 3x - 2$$

Complete the sentence below by ticking (✓) the correct box.

**The value of  $x$  is ...**



... one particular number.

... any number less than zero.

... any number greater than zero.

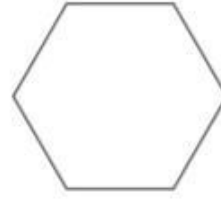
... any whole number.

... any number at all.

1 mark

25. (a) The **perimeter** of a regular hexagon is  $42a + 18$

Write an expression for the length of **one** of its sides.



\_\_\_\_\_

1 mark

(b) The **perimeter** of a different regular polygon is  $75b - 20$

The length of one of its sides is  $15b - 4$

How many sides does this regular polygon have?



\_\_\_\_\_

1 mark

(c) The **perimeter** of a square is  $4(c - 9)$

Find the perimeter of the square when  $c = 15$



\_\_\_\_\_

1 mark

24. Look at these equations.

$$11 = 6 + a$$
$$a + 7 = 10 + b$$

Use **both** equations to work out the value of  $b$



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

\_\_\_\_\_  
\_\_\_\_\_  
2 marks

Key Stage 3: 2009 Paper 2 Level 3-5

50.

17. Find the values of  $x$  and  $y$

$$694 + 396 + x = 1742$$

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

\_\_\_\_\_  
1 mark

$$y \div 13 = 34$$

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

\_\_\_\_\_  
1 mark

51.

24. Use  $a = 7$  and  $b = 28$  to work out the value of these expressions.  
The first one is done for you.

$$a + b = \underline{35}$$



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

1 mark



$$\frac{b}{a} = \underline{\hspace{2cm}}$$

1 mark



$$(a + b)^2 = \underline{\hspace{2cm}}$$

1 mark

Key Stage 3: 2009 Paper 1 Level 4-6

52.

17. Look at these equations.

$$11 = 6 + a$$
$$a + 7 = 10 + b$$

Use **both** equations to work out the value of  $b$

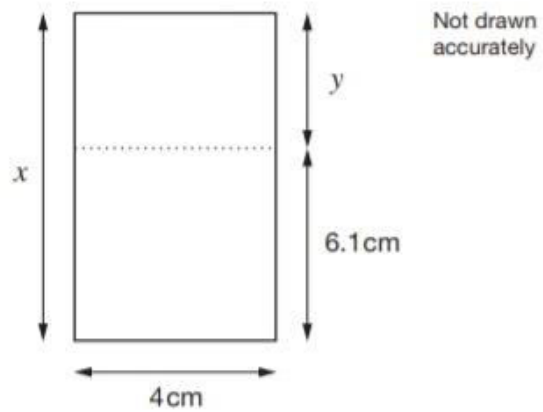


$$b = \underline{\hspace{2cm}}$$

2 marks

53.

20. Look at the rectangle.



The **total area** of the rectangle is  $40\text{ cm}^2$

Work out lengths  $x$  and  $y$



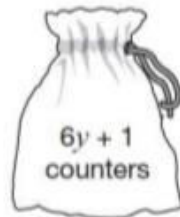
$x =$  \_\_\_\_\_ cm     $y =$  \_\_\_\_\_ cm

\_\_\_\_\_

2 marks

54.

21. (a) Bags A and B contain some counters.



Bag A



Bag B

The number of counters in each bag is **the same**.

Work out the value of  $y$



\_\_\_\_\_

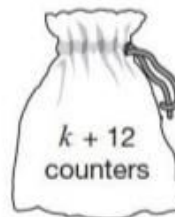
\_\_\_\_\_

2 marks

(b) Bag C contains **more** counters than bag D.



Bag C



Bag D

What is the **smallest** possible value of  $k$ ?



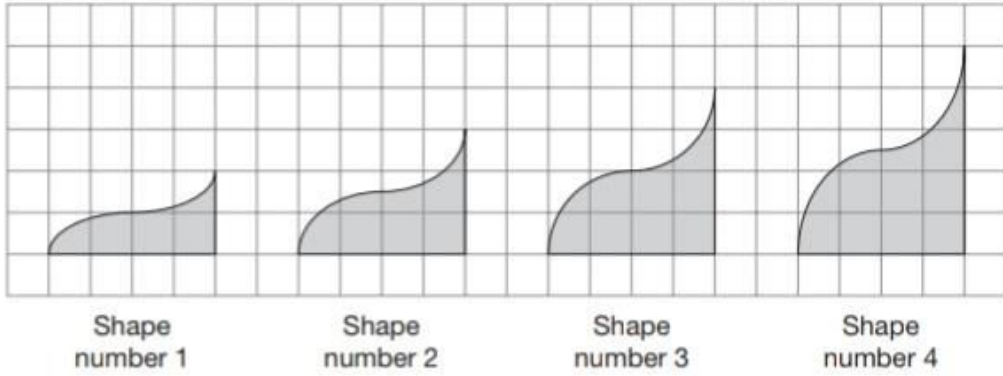
\_\_\_\_\_

\_\_\_\_\_

2 marks



24. Look at the sequence of shapes on a square grid.



The table shows information about these shapes.

Shape number <i>N</i>	Base <i>B</i>	Height <i>H</i>	Area <i>A</i>
1	4	2	4
2	4	3	6
3	4	4	8
4	4	5	10

**Rules** connect *N*, *B*, *H* and *A*.

Write one missing letter in each space below to complete the rule.



$$H = \underline{\quad\quad\quad} + 1$$

$$A = \underline{\quad\quad\quad} \times 2$$

$$\underline{\quad\quad\quad} = 2N + 2$$

\_\_\_\_\_   
 2 marks

8. Find the values of  $x$  and  $y$

$$694 + 396 + x = 1742$$

  $x =$  \_\_\_\_\_

\_\_\_\_\_   
 1 mark

$$y \div 13 = 34$$


  $y =$  \_\_\_\_\_

\_\_\_\_\_   
 1 mark


57.

15. Use  $a = 7$  and  $b = 28$  to work out the value of these expressions.  
The first one is done for you.


$$a + b = \underline{35}$$

  $ab =$  \_\_\_\_\_

\_\_\_\_\_   
 1 mark

  $\frac{b}{a} =$  \_\_\_\_\_

\_\_\_\_\_   
 1 mark

  $(a + b)^2 =$  \_\_\_\_\_

\_\_\_\_\_   
 1 mark

58.

17. A teacher said:

Choose values for  $a$  and  $b$   
Use the letters to make expressions for the numbers 1 to 8

(a) One group of pupils chose  $a = 2$  and  $b = 3$

Complete their table.

$a = 2$ $b = 3$
$b - a = 1$
$a = 2$
$b = 3$
$2 \times a = 4$
_____ = 5
$a \times b = 6$
$2 \times a + b = 7$
_____ = 8

\_\_\_\_\_  
1 mark

\_\_\_\_\_  
1 mark

(b) Here is part of the table from a **different** group of pupils.

$2 \times a = 6$
$a + b = 7$

What values did they choose?

$a =$  \_\_\_\_\_  $b =$  \_\_\_\_\_

\_\_\_\_\_  
1 mark

\_\_\_\_\_  
1 mark

59.

24. (a) When  $y = 1$ , which expression below has the **largest value**?  
Put a ring round it.



$3 + y$

$10 - y$

$y^2$

$3y$

$\frac{y}{2}$

1 mark

- (b) When  $y = 4$ , which expression below has the **largest value**?  
Put a ring round it.



$3 + y$

$10 - y$

$y^2$

$3y$

$\frac{y}{2}$

1 mark

- (c) Write a number to make the sentence below true.



When  $y = \underline{\hspace{2cm}}$ , the expression  $3 + y$  has a **larger value** than the expression  $3y$

1 mark

7. A teacher said:

Choose values for  $a$  and  $b$   
Use the letters to make expressions for the numbers 1 to 8

(a) One group of pupils chose  $a = 2$  and  $b = 3$

Complete their table.

$a = 2$ $b = 3$	
$b - a = 1$	
$a = 2$	
$b = 3$	
$2 \times a = 4$	
_____ = 5	_____
$a \times b = 6$	
$2 \times a + b = 7$	
_____ = 8	_____

(b) Here is part of the table from a **different** group of pupils.

$2 \times a = 6$
$a + b = 7$

What values did they choose?

$a =$  \_\_\_\_\_  $b =$  \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

14. (a) When  $y = 1$ , which expression below has the **largest value**?  
Put a ring round it.



$3 + y$

$10 - y$

$y^2$

$3y$

$\frac{y}{2}$

1 mark

- (b) When  $y = 4$ , which expression below has the **largest value**?  
Put a ring round it.



$3 + y$

$10 - y$

$y^2$

$3y$

$\frac{y}{2}$

1 mark

- (c) Write a number to make the sentence below true.



When  $y = \underline{\hspace{2cm}}$ , the expression  $3 + y$  has a **larger value** than the expression  $3y$

1 mark

19. Look at the equation.

$$14n = 98$$

(a) Work out the value of  $140n$



\_\_\_\_\_

1 mark

(b) Work out the value of  $14(n + 1)$



\_\_\_\_\_

1 mark

63.

22. (a) Look at this information.

$$x \leq 0$$

Give an example of what the value of  $x$  could be.

 \_\_\_\_\_

Give a **different** example of what the value of  $x$  could be.

 \_\_\_\_\_

1 mark

(b) Now look at this information.

$$2y + 3 \leq 11$$

What is the **largest** value that  $y$  could be?

 \_\_\_\_\_

1 mark



26. (a) I **add** the expressions  $n$  and  $n + 2$

Put a ring round the expression that shows the result.



$2n$

$4n$

$n(n + 2)$

$n^2 + 2$

$2n + 2$

\_\_\_\_\_   
 1 mark

(b) Now I **multiply** the expressions  $n$  and  $n + 2$

Put a ring round the expression that shows the result.



$2n$

$4n$

$n(n + 2)$

$n^2 + 2$

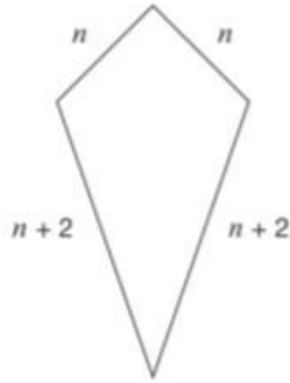
$2n + 2$

\_\_\_\_\_   
 1 mark

Key Stage 3: 2010 Paper 2 Level 4-6

65.

19. The diagram shows a kite.  
The side lengths are in centimetres.



Not drawn accurately

- (a) When  $n = 9$ , what is the perimeter of the kite?

 \_\_\_\_\_ cm

\_\_\_\_\_   
 1 mark

- (b) When the perimeter of the kite is **100 cm**, what is the value of  $n$ ?



$n =$  \_\_\_\_\_

\_\_\_\_\_   
 2 marks

12. Here are two equations.

$$a + b = 10$$

$$a - b = 2$$

Write the values of  $a$  and  $b$  that make **both** equations true.

  $a = \underline{\hspace{2cm}}$       $b = \underline{\hspace{2cm}}$

          
1 mark

67.

19. A school held a concert.  
Tickets for adults cost more than tickets for children.



Mr and Mrs Evans went to the concert with 3 children.

Their tickets cost **£20.50**

Mr and Mrs Singh went to the concert with 2 children.

Their tickets cost **£17.00**

Work out the cost of one adult ticket and one child ticket.



One adult: £

One child: £

\_\_\_\_\_  
2 marks

16. Write the missing values in this table.

$y$	$2y$	$y^2$
3	6	
2		
		36

\_\_\_\_\_

\_\_\_\_\_

2 marks

69.

18. For each statement below, tick (✓) the values of  $n$  for which the statement is **true**.

The first row is done for you.

	$n = 4$	$n = 5$	$n = 6$	$n = 7$
$n$ is greater than 5			✓	✓
$2n$ is equal to 10				
$2 + n$ is less than 8				
$n^2$ is less than 30				

\_\_\_\_\_

\_\_\_\_\_

2 marks