

## Algebra With Classified answer book



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## 3- Substitution

1. When x = 5, work out the values of the expressions below.

$$2x + 13 =$$

$$5x - 5 =$$

$$3 + 6x =$$

2. a) Work out the value of 2a + ay when a = 5 and y = -3



(b) Work out the value of  $5t^2 - 7$  when t = -2



3. 
$$A = \frac{h(x+10)}{2}$$

$$A = 15 X = 5$$

Work out the value of h

4.(a) When x Tick (✓) the	= 8, what is to		5x?	
5	13	40	58	None of these
. ,	8, what is the correct box b		8x-x?	
	3	16	30	None of these
	8, what is the correct box b		<b>2</b> ?	
8	10	16	64	None of these
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6. Look at this equation.

$$y = 2x^3 + 10$$

(a) When x = 2, what is the value of  $\sqrt{?}$ 

\_\_\_\_\_

(b) When x = -2, what is the value of y?

\_\_\_\_\_

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

Put a ring round the correct equation.

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

7. Complete the statements below.

When x is 8, 4x is

When x is , 4x is 48

When x is 8, is 48

## 8. 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 = 12 and b = 3

Complete their table.

a=	<i>b</i> = 3
b-a=	1
a =	
b =	3
2 × a =	4
34000- MERCO	5
a×b =	6
2 × a + b =	7
	8

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

What values did they choose?

9. (a) Look at this equation.

$$x + y = 30$$

What could the values of x and y be?

Give one pair of values.

$$x = \dots \qquad y = \dots$$

Now give a **different** pair of values that x and y could be.

(b) Here is a different equation.

$$a - b = 30$$

When a = 40, what is the value of b? b = .....

10. 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			<b>*</b>	<b>√</b>
2n is equal to 10				
2 + n is less than 8				
n² is less than 30				224-242-242-242-242-242-242-242-242-242

11. Look at the information.

$$x = 4$$
  $y = 13$ 

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 = 2x + 5

To get y, multiply x by and add

This can be written as y =

To get y, multiply x by and subtract

This can be written as y =

To get y, divide x by and add

This can be written as y =

12. Kevin says:

When x = 3 and y = 10, the value of  $\frac{2y}{x+1}$  is 5

Is Kevin correct? Tick (✓) Yes or No.

Yes No

Explain your answer.

13. Look at the three expressions below.

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

14. Write the missing values in this table.

У	2 <i>y</i>	y <sup>2</sup>
3	6	
2		
		36

15. Work out the values of these expressions, when x equals 6

$$5x + 2 =$$
 .....

$$5(x + 2) = \dots$$

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

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

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

17. (a) Look at this equation.

$$ab = 24$$

Write four different solutions to the equation.

(b) Now look at this equation.

$$a+b=10$$

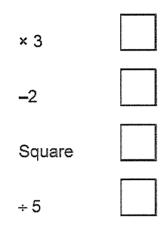
What values of a and b are solutions to both [ab= 24] and

$$[a+b=10]$$
 ?

18. Here is an expression  $\frac{3(x-2)^2}{5}$ 

A value of x is substituted into the expression.

Tick  $(\checkmark)$  the operation that is performed **first** when the value of this expression is calculated.



19. Join pairs of algebraic expressions that have the same value

when a=3, b=2 and c=6

One pair is joined for you.

