

Surname	
Other Names	
Candidate's Signature	

## GCSE 9 - 1 Questions

### Substitution

**Calculator Not Allowed**

#### INSTRUCTIONS TO CANDIDATES

Write your name in the space provided.

Write your answers in the spaces provided in this question paper.

Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

**Total Marks :**

1) A formula for C is given as  $C = 2A + 3B$ .

(a) Calculate C when  $A = 4$  and  $B = 2$

Answer C = \_\_\_\_\_ [2]

(b) Calculate C when  $A = 0$  and  $B = 9$

Answer C = \_\_\_\_\_ [1]

(c) Calculate B when  $C = 27$  and  $A = 6$

Answer B = \_\_\_\_\_ [3]

2) Find the value of  $10x + 3y$  when  $x = 4$  and  $y = -12$

Answer \_\_\_\_\_ [2]

- 3) (a) Use the formula

$$H = G - 6$$

to find  $H$  when  $G = 32$

Answer  $H =$  \_\_\_\_\_ [1]

- (b) Use the formula

$$R = 3S + 4T$$

to find the value of  $R$  when  $S = 5$  and  $T = 6$

Answer  $R =$  \_\_\_\_\_ [2]

- (c) Use the formula

$$N = 5Q - 3P$$

to find the value of  $P$  when  $N = 12$  and  $Q = 6$

Answer  $P =$  \_\_\_\_\_ [3]

(d)  $A = \frac{B - C}{D}$

Calculate  $A$  when  $B = -10$ ,  $C = 8$  and  $D = 6$

Answer  $A =$  \_\_\_\_\_ [2]

4) Find the value of  $5x - 2y$  when  $x = -2$  and  $y = 4$

Answer \_\_\_\_\_ [2]

5)  $E = \frac{2A+5}{D-1}$  Find the value of  $E$  when  $A = 20$  and  $D = -9$

Answer  $E =$  \_\_\_\_\_ [3]

6)  $S = \frac{a}{1-r}$  Find  $S$  when  $a = 12$  and  $r = \frac{1}{2}$

Answer  $S =$  \_\_\_\_\_ [2]

- 7) Use the formula  $M = 4A - 6B$  to find the value of  $M$  when  $A = 8$  and  $B = 3$ . [2]

.....

.....

.....

8)  $P = 3L + 2W$

- (a) Find the value of  $P$  when

$L = 10$  and  $W = 6$

Answer \_\_\_\_\_ [2]

- (b) Find the value of  $W$  when

$L = 7$  and  $P = 31$

Answer \_\_\_\_\_ [3]

9) Use the formula  $S = 4Q - 3T$

(a) to find the value of  $S$  when  $Q = 6$  and  $T = 2$

Answer  $S =$  \_\_\_\_\_ [2]

(b) to find the value of  $Q$  when  $S = 8$  and  $T = 4$

Answer  $Q =$  \_\_\_\_\_ [2]

10) Motorway recovery cost = Call out fee + £2 per mile.

What is the Motorway recovery cost for 15 miles with a call out fee of £40?

Answer £ \_\_\_\_\_ [2]

- 11) The Print Pot advertise printing costs as

$$\text{Cost (pence)} = 35 \times \text{colour prints} + 10 \times \text{black and white prints}$$

- (a) Gemma gets 3 colour prints and 2 black and white prints.

Work out the cost in pounds (£).

Answer £ \_\_\_\_\_ [2]

- (b) The Fast Print advertise their printing costs as

$$\text{Cost (pence)} = 30 \times \text{number of prints} + 90$$

How much would Gemma have paid in The Fast Print?

Answer £ \_\_\_\_\_ [2]

12)

In the following table, the letters  $a$ ,  $b$ ,  $c$  and  $d$  represent different numbers.

The total for each row is given at the side of the table.

Find the values of  $a$ ,  $b$ ,  $c$  and  $d$ .

$a$	$a$	$a$	$a$	16
$a$	$b$	$b$	$a$	18
$a$	$c$	$c$	$c$	13
$a$	$b$	$c$	$d$	14

.....

.....

.....

.....

$a =$  .....       $b =$  .....       $c =$  .....       $d =$  .....      [4]