Name:

**Exam Style Questions** 

Substitution

Equipment needed: Calculator, pen

## Guidance

- 1. Read each question carefully before you begin answering it.
- 2. Check your answers seem right.
- 3. Always show your workings

Video Tutorial

Video 20



**Answers and Video Solutions** 



1. Find the value of 5c + 2 if c = 6



(1)

2. Find the value of 4a - b when a = 9 and b = 8



(2)

3. Find the value of 12h + 9t when h = 11 and t = 3



......(2)

4. Circle the expression that has the greatest value when y = 10



$$2y 31 - y y + 9 \frac{y}{2}$$

5. If 
$$x = 6$$
 and  $y = -2$ , find the value of



(a)  $x^2$ 

(1)

(b) 
$$5x + y$$

(1)

(c) 
$$x + y^2$$

(1)

$$(d) \quad \frac{y+20}{x}$$

(2)

## $6. \qquad P = 2W + 2L$



Find P if W = 3 and L = 9

7.	You are given that $m=0.5,\ p=0.75$ and $c=2.2$ Find the value of											
	(a) $3c + m$	(2)										
	(b) $m+p+c$											
		(1)										
8.	The cost of hiring a hot tub is found using the formula											
	Hire cost = £50 plus an extra £45 per day											
	(a) Work out the hire cost for hiring the hot tub for 21 days.											
		(2)										
	Alex hires the hot tub for a number of days and the cost is £545											
	(b) How many days did Alex hire the hot tub?											

9. This formula can be used to convert between Celsuis (C) and Fahrenheit (F).



$$F = 1.8C + 32$$

(a) Convert  $2^{\circ}C$  into Fahrenheit

(2)

(b) Convert  $50^{\circ}F$  into Celsius

(2)

10. Given that a = 4, b = 9 and c = -5



Work out the value of

$$\frac{ab + 24}{2c}$$

11. (a) Find the value of 
$$5(a+c)$$
 where

(a) Find the value of 5(a+c) when a=4 and c=9

..... **(2)** 

(b) Find the value of 7x + 2y when x = 2 and y = -9

(2)

12. 
$$P = 2W + 2L$$



Find W if P = 30 and L = 11

**(2)** 

13. 
$$y = w - 2a^2$$



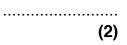
$$w = 400$$
$$a = 5$$

$$a = 5$$

Work out the value of y

14. The cost in pounds, C, of hiring a car is given by C=25d+45 where d is the number of days the car is hired.

(a) Find C if d = 4



(b) Find d if C = 245

15. 
$$W = 2x + 5y$$



(a) Work out the value of W when x=8 and y=-3

(2)

(b) Work out the value of x when  $\,W=59\,$  and  $\,y=7\,$ 

.....

The amount of medicine, s ml, to give to a puppy, up to 18 months old, can be worked out using the formula.

$$s = \frac{am}{18}$$

s is the amount of medicine, in ml. a is the dose for an adult dog, in ml. m is the age of the puppy, in months.

A puppy is 3 months old. An adult dog's dose is 45ml.

Work out the amount of medicine the puppy should be given.

.....ml **(3)** 



$$m = abc$$

Find m if a = 3, b = -8 and c = 2

## 18. Heidi is a plumber.



She uses this formula to work out the cost to charge her customers.

$$C = 40h + p + 0.5d$$

C is the total cost of the job, in pounds.

h is the number of hours worked.

p is the cost of any parts used, in pounds.

d is the distance travelled, in miles.

Heidi's last job took 3 hours and the cost of the parts used was £17.50 The total cost of the job was £156

Work out how far Heidi travelled in miles.

												n	n	i	I	e	95	3
															(		3	)



$$x + 3 = 10$$



Work out the value of  $\frac{5x-3}{4}$ 

20. v = u + at



(a) Work out v when u = 23, a = 4 and t = 3

(2)

(b) Work out u when v = 30, a = 2 and t = 8

(2)

(c) Work out t when v = 40, u = 12 and a = 4

(2)

21. 2x - y = 17



(a) Work out the value of 6x - 3y

(2)

(b) Work out the value of y - 2x

(1)

22. 
$$y = 7x^2$$



Explain what happens to the value of y when the value of x doubles.

**(2)** 



3,	=	800					
У	_	$x^3$					

Explain what happens to the value of y when the value of x doubles.

**(2)** 

Calculate the value of  $x^y - y^x$ 24.



when x = 3 and y = 6

$$80 = 2mn$$



m and n are negative integers.

Write down a pair of possible values for m and n.

$$m = ....$$
 and  $n = ....$  (2)

26.

$$y = (x - 5)(x + 1)$$



Find y if 
$$x = -3$$

(2)

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

$$4w + 3y = 30$$

Work out the value of x when y = 4

(3)