2.6 – Simultaneous equations

Student name: _____ Score: _____

1. Solve the simultaneous equations.

$$2x + 3y = 7$$
$$5x - 4y = -17$$

$x =$ -1

$y =$ 3 [4]

2. The cost of a mango is $\$m$.
The cost of a pineapple is $\$p$.

(a) Write an expression, in terms of m and p, for the cost of 2 mangoes and 3 pineapples.

$ 2m + 3p [1]

(b) The cost of 2 mangoes and 3 pineapples is \$13.
The cost of 6 mangoes and 2 pineapples is \$18.

Write down two equations and solve them to find the cost of one mango and the cost of one pineapple.

mango = $ 2

pineapple = $ 3 [4]

3. Solve the simultaneous equations.

$$x - 2y = 7$$
$$x + 2y = 3$$

$x =$ 5

$y =$ -1 [2]

4. Solve the simultaneous equations.

$$3p + 4q = 7$$
$$5p + 6q = 10$$

$p =$ -1

$q =$ 2.5 [4]

5. Solve these simultaneous equations.

$$y = 2x - 8$$
$$3x + 2y = 5$$

$x =$ 3

$y =$ -2 [3]

6. Solve these simultaneous equations.

$$5x + 2y = 11$$
$$4x - 3y = 18$$

$x =$ 3

$y =$ -2 [4]

7. Solve the simultaneous equations.

$$3x - 2y = 7$$
$$5x + 2y = 1$$

$x =$ 1 .....

$y =$ -2 ..... [2]

8. Solve the simultaneous equations.
You must show all your working.

$$3x + 2y = -5$$
$$2x - 5y = 3$$

$x =$ -1 .....

$y =$ -1 ..... [4]

9. Solve the simultaneous equations.

$$3g - 2h = 11$$
$$g - 2h = 5$$

$g =$ 3 .....

$h =$ -1 ..... [2]

10. Solve the simultaneous equations.

$$u - w = 9$$
$$3u + w = 19$$

$u =$ 7 .....

$w =$ -2 ..... [4]

11. Solve the simultaneous equations.

$$4x - 3y = 12$$
$$6x - y = 11$$

$x =$ 1.5 .....

$y =$ -2 ..... [3]

12. $y = x + 1$ and $y = 2 - x$

Find the value of x.

$x =$ 0.5 ..... [2]

13. Solve the simultaneous equations.

$$4x + 3y = 0$$
$$2x - y = 5$$

$x =$ 1.5 .....

$y =$ -2 ..... [3]

14. Solve these simultaneous equations.

$$x - 3y = 7$$
$$x - 2y = 5$$

$x =$ 1 .....

$y =$ -2 ..... [2]

15. Solve the simultaneous equations.

$$a + b = 16$$
$$2a - b = 17$$

$a =$ 11

$b =$ 5 [2]

16. Solve the simultaneous equations.

$$3x + 2y = -1$$
$$7x - y = 26$$

$x =$ 3

$y =$ –5 [2]

17. Solve the simultaneous equations.

$$2x + 3y = 5$$
$$y = 3x + 9$$

$x =$ –2

$y =$ 3 [3]

18. Solve the simultaneous equations.

$$5x + 2y = -12$$
$$3x - y = -5$$

$x =$ –2

$y =$ –1 [3]

19. Solve the simultaneous equations.

$$x - 3y = 4$$
$$5x - 6y = -7$$

$x =$ –5

$y =$ –3 [3]

20. The mean of two numbers is 46.
The difference between the two numbers is 12.

Find the two numbers.

40 and 52 [2]

21. Solve the simultaneous equations.

$$3x + 2y = 4$$
$$2x - 3y = 7$$

$x =$ 2

$y =$ –1 [4]

22. Solve the simultaneous equations.

$$3t - u = -5$$
$$3t + 2u = 1$$

$t =$ –1

$u =$ 2 [2]

23. Solve the simultaneous equations.

$$2p - 3q = 7$$
$$p + 3q = 2$$

$p =$ 3

$q =$ $-\frac{1}{3}$ [2]

24. Solve the simultaneous equations.

$$3x - 2y = 12$$
$$5x + y = 7$$

$x =$ 2

$y =$ –3 [3]

25. Solve the simultaneous equations.
You must show all your working.

$$4x + 3y = -10$$
$$3x - 4y = 5$$

$x =$ –1

$y =$ –2 [4]