Simultaneous equations

All Multiple Choice

Name: _____

1 The coordinate pair $(-2, -1)$ is a solution to which one of the following pairs of simultaneous equations?

A $3x + 2y = -8$
   $2x + 3y = -6$

B $3x - 2y = -4$
   $2x - 3y = 1$

C $2x + 3y = -7$
   $3x + 2y = -8$

D $2x - 3y = 1$
   $2x + 3y = -6$

2 The coordinate pair $(3, -7)$ is a solution to which one of the following pairs of simultaneous equations?

A $4x - 7y = 61$
   $3x + y = 2$

B $7x - 4y = 49$
   $x + 3y = -19$

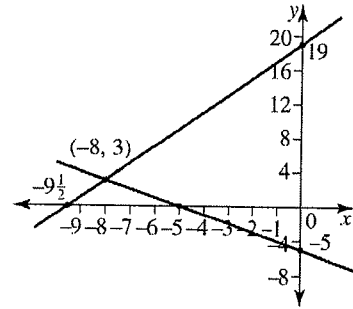C $4x + 7y = -37$
   $3x - y = -2$

D $3x - 7y = 58$
   $4x + y = 6$

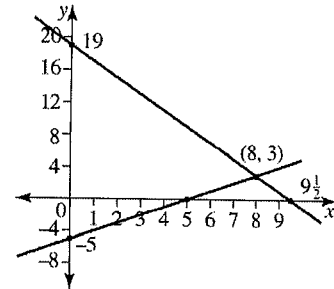**3** The graphical solution to the following pair of simultaneous equations is:
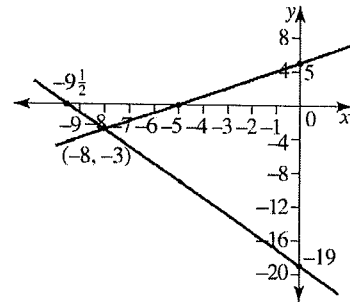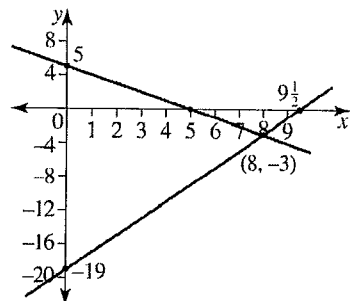 $x - y = 5$
   $2x + y = 19$

A
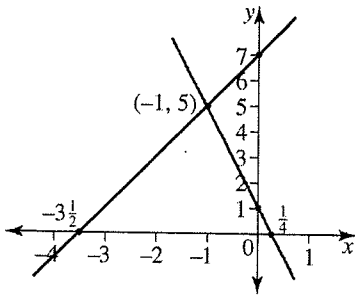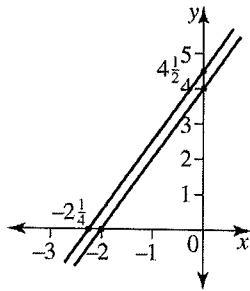

B

C

D

4 The figure below depicts a graphical solution to which of the following pairs of simultaneous equations?

A $\quad y = 1 - 4x$
$\quad\quad y = 2x + 7$

B $\quad y = 1 + 4x$
$\quad\quad y = 2x + 7$

C $\quad y = 1 + 4x$
$\quad\quad y = 2x - 7$

D $\quad y = 1 - 4x$
$\quad\quad y = 2x - 7$

5 The figure below illustrates which of the following pairs of simultaneous equation?

A $\quad\quad\quad y = 2x - 4$
$\quad 4x - 2y + 9 = 0$

B $\quad\quad\quad y = 2x + 4$
$\quad 4x + 2y + 9 = 0$

C $\quad\quad\quad y = 2x - 4$
$\quad 4x - 2y - 9 = 0$

D $\quad\quad\quad y = 2x + 4$
$\quad 4x - 2y + 9 = 0$

6 The solution to the following pair of simultaneous equations is:
$2x - y = -6$
$3x + y = -29$

A $\quad$ (3, 12)
B $\quad$ (−7, −8)
C $\quad$ (−4, −2)
D $\quad$ (4, 14)

7 The solution to the following pair of simultaneous equations is:
$5x - 2y = -16$
$3x + 4y = -7$

A $\quad \left(-5, -4\dfrac{1}{2}\right)$

B $\quad \left(-3, \dfrac{1}{2}\right)$

C $\quad \left(-1, 5\dfrac{1}{2}\right)$

D $\quad \left(1, 10\dfrac{1}{2}\right)$

8 The solution to the following pair of simultaneous equations is:
$x - 4y = 16$
$5x - 6y = 10$

A $\quad$ (12, −1)
B $\quad$ (8, −2)
C $\quad$ (4, −3)
D $\quad$ (−4, −5)

9 The solution to the following pair of simultaneous equations is:
$5x - 2y = 18$
$2x - 5y = 24$

A $\quad$ (6, 6)
B $\quad$ (−2, −14)
C $\quad$ (2, −4)
D $\quad$ (4, 1)

10 The solution to the following pair of simultaneous equations is:

$7x + 9y = 1$

$3x + 5y = 5$

A $(-5, -4)$

B $(-4, 5)$

C $(-5, 4)$

D $(5, -4)$

11 The solution to the following pair of simultaneous equations is:

$x = 4 - 6y$

$9x - 4y = 65$

A $(4, 0)$

B $\left(7, -\dfrac{1}{2}\right)$

C $(10, -1)$

D $\left(13, -1\dfrac{1}{2}\right)$

12 The solution to the following pair of simultaneous equations is:

$y = 3x - 7$

$12x - 5y = 34$

A $\left(\dfrac{1}{3}, -6\right)$

B $\left(\dfrac{2}{3}, -5\right)$

C $\left(-\dfrac{1}{3}, -8\right)$

D $\left(-\dfrac{2}{3}, -9\right)$

13 The solution to the following pair of simultaneous equations:

$x + y = 1$

$2x - 6y = 3$

A $\left(-1\dfrac{1}{8}, \dfrac{1}{8}\right)$

B $\left(\dfrac{7}{8}, \dfrac{1}{8}\right)$

C $\left(1\dfrac{1}{8}, -\dfrac{1}{8}\right)$

D $\left(1\dfrac{7}{8}, -\dfrac{7}{8}\right)$

14 The solution to the following pair of simultaneous equations is:

$2x - y = -22$

$5x - 4y = -73$

A $(1, 24)$

B $(-1, 20)$

C $(-3, 16)$

D $(-5, 12)$

15 The solution to the following pair of simultaneous equations is:

$7x = -61 - 3y$

$4x - 2y = -20$

A $(-7, -4)$

B $(-10, 3)$

C $(-13, 10)$

D $(-16, 17)$

16 The two numbers whose sum is 63 and whose difference is 15 are:

A   45 and 18

B   43 and 20

C   41 and 22

D   39 and 24

17 A rectangular courtyard has a total perimeter of 32 metres. The length is 2 metres more than the breadth. The dimensions of the courtyard are:
A 6 metres by 9 metres
B 7 metres by 9 metres
C 7 metres by 8 metres
D 6 metres by 8 metres

18 A moneybox contains only $1 and 20c coins. If there are 93 coins altogether, totalling $51.40, the number of each type of coin respectively is:
A 43 and 50
B 42 and 51
C 41 and 52
D 40 and 53

19 Damian buys 9 tennis balls and 2 tennis racquets for $225.40. Emma buys 6 tennis balls and 3 tennis racquets for $296.10. The cost of each tennis ball and each tennis racquet, respectively, is:
A $5.60 and $87.50
B $6.50 and $85.70
C $6.50 and $78.50
D $3.50 and $75.80

20 Seven adults and 5 children pay $115.20 to travel on a steam train, whereas 5 adults and 2 children pay $71.60. The fare for each adult and each child, respectively, is:
A $11.80 and $8.60
B $11.60 and $6.80
C $11.10 and $6.60
D $11.10 and $8.80

21 The substitution of the coordinate pair (2, −6) makes which one of the following inequalities true?
A $7x - 2y < 3$
B $2x - 7y < 3$
C $3x - 2y > 7$
D $3x + 2y > 7$

22 The substitution of the coordinate pair (−3, 3) makes which one of the following inequalities false?
A $2y \leq 3 - 5x$
B $3y \leq 5 + 3x$
C $5y \geq 3 + 2x$
D $2y \geq 3 + 5x$

23 The substitution of the coordinate pair (−7, −2) makes which one of the following inequalities true?
A $2x + 3y > -18$
B $3x + 2y > -18$
C $2x - 3y < -18$
D $3x - 2y > -18$

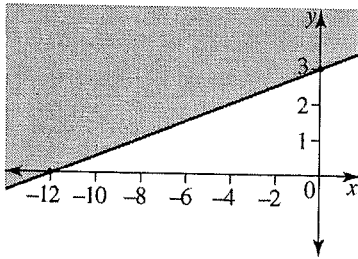**24** The figure below represents the inequality:
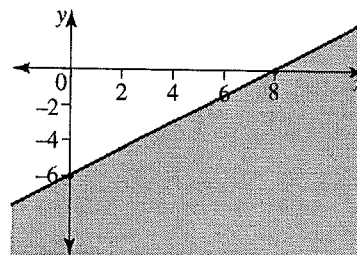
A $3x - 4y \leq 24$
B $3x - 4y \geq 24$
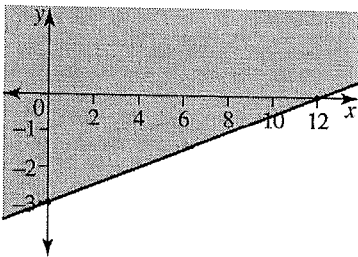C $3x + 4y \geq 24$
D $4x - 3y \geq 24$

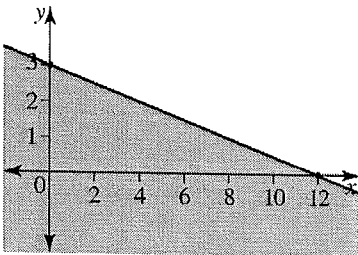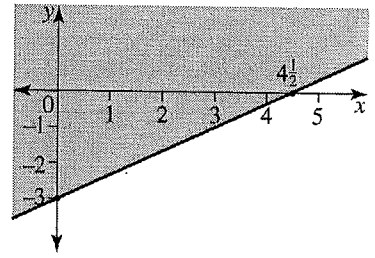**25** The graph of the inequality $4y \le 12 - x$ is:

A
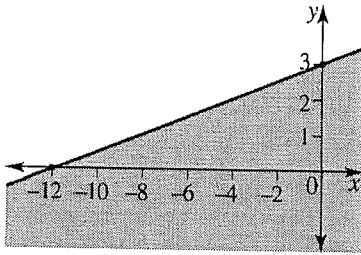
B

C

D

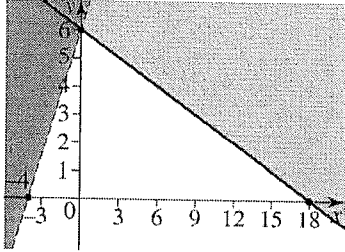**26** The figure below represents the inequality:

A $3y - 2x \ge -9$

B $2y - 3x \ge 9$

C $3y + 2x \ge -9$

D $2y + 3x \ge -9$

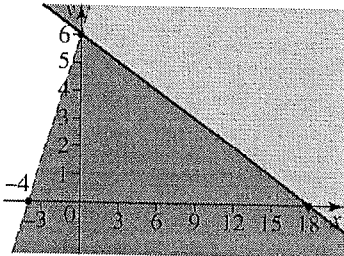**27** A graph to show the solution to the following pair of simultaneous inequalities is:
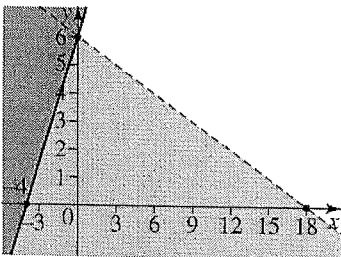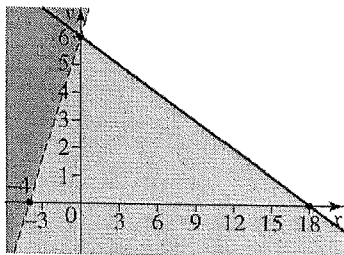
$$2y - 3x > 12$$
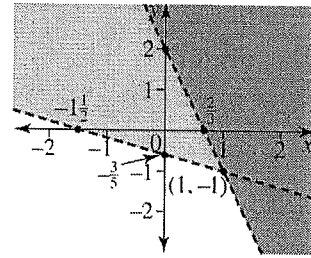
$$3y + x \leq 18$$

A

B

C

D

28 The figure below shows the solution to which of the following pairs of simultaneous inequalities?

A $\qquad y > 2 - 3x$

$5y + 2x < -3$

B $\qquad y < 2 - 3x$
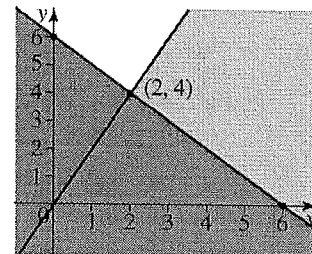
$5y + 2x < -3$

C $\qquad y > 2 - 3x$

$5y - 2x < -3$

D $\qquad y > 2 - 3x$

$5y + 2x > -3$

29 The figure below shows the solution to which of the following pairs of simultaneous inequations?

A $\quad 2y - 4x \leq 0$

$y + x \geq 6$

B $\quad 2y - 4x \leq 0$

$y - x \geq 6$

C $\quad 2y - 4x \leq 0$

$y + x \leq 6$

D $\quad 2y - 4x \geq 0$

$y + x \geq 6$

ANSWERS - SIMULTANEOUS EQNS

(1) C   (8) D   (15) A   (22) B

(2) A   (9) C   (16) D   (23) D

(3) B   (10) C   (17) B   (24) B

(4) A   (11) B   (18) C   (25) D

(5) D   (12) A   (19) A   (26) A

(6) B   (13) C   (20) B   (27) D
                                                              (28) D

(7) B   (14) D   (21) C

                                                                                        (29) C