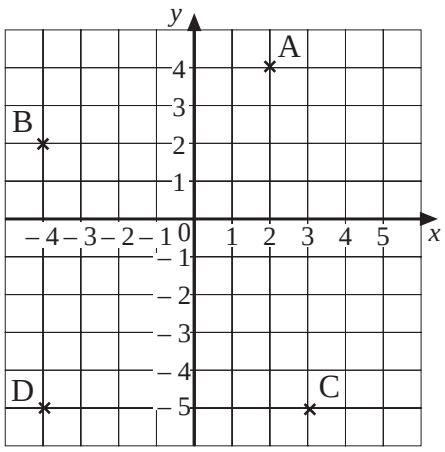
UNIT 5 *Linear Graphs and Equations* **Revision Test 5.1** (Standard)

1. Write down the coordinates of each of the points shown below:



(4 marks)

2. The corners of a square are at the points A, B, C and D.

The coordinates of A are (2, – 3).

The coordinates of B are (– 2, – 3).

The coordinates of C are (– 2, 1).

(a) Draw the square.

(b) Write down the coordinates of D.

(5 marks)

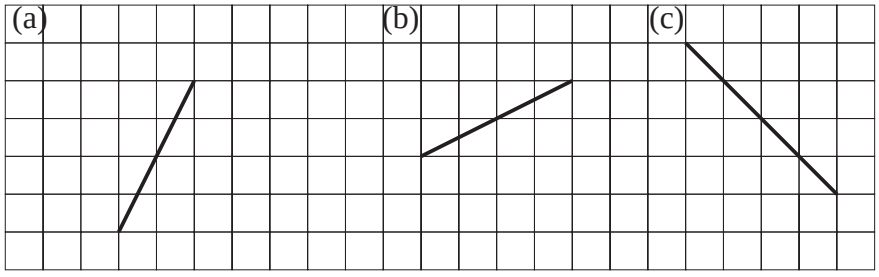
3. (a) Copy and complete the following table for $y = 2x - 1$.

x	– 2	– 1	0	1	2	3
y						

(b) Draw the graph of the line $y = 2x - 1$.

(6 marks)

4. Determine the gradient of each of the following lines:



(6 marks)

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Revision Test 5.1 (Standard)

5. Solve the following equations:

(a) $4x = 44$ (b) $x + 7 = 71$ (c) $\frac{x}{3} = 9$

(d) $2x + 6 = 20$ (e) $5x - 9 = 26$ (f) $2(x - 9) = 30$

(9 marks)

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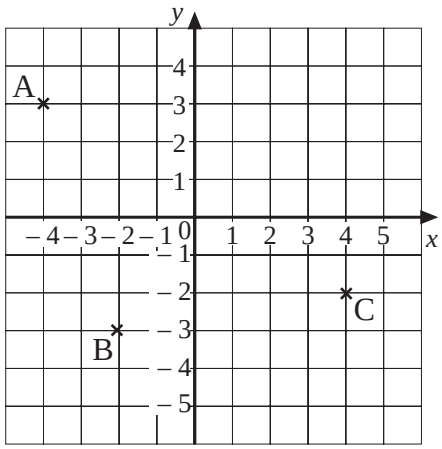
UNIT 5 *Linear Graphs and Equations* Revision Test 5.2 (Academic)

1. Write down the coordinates of each of the points shown below:



(3 marks)

2. (a) Copy and complete the following table for $y = 3x - 2$.

x	-3	-2	-1	0	1	2	3
y							

(b) Draw the graph of the line with equation $y = 3x - 2$.

(c) Copy and complete the following table for $y = x + 4$.

x	-3	-2	-1	0	1	2	3
y							

(d) Draw the graph of the line with equation $y = x + 4$ on the same axes as the graph of the line $y = 3x - 2$.

(e) Write down the coordinates of the point where the two lines cross.

(f) Write down the solution of the equation $3x - 2 = x + 4$.

(10 marks)

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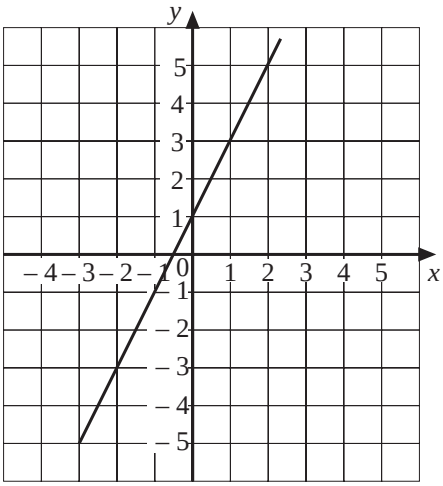
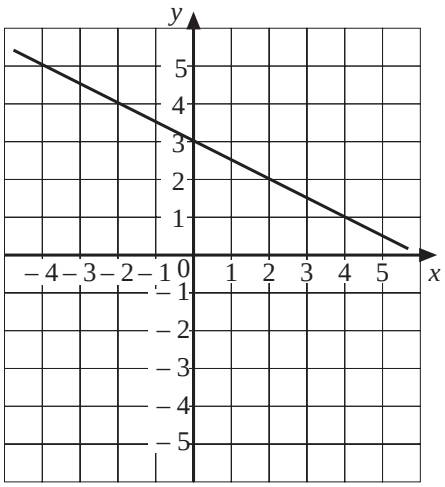
Revision Test 5.2 (Academic)

3. Determine the equation of each of the following lines:

(a)



(b)



(6 marks)

4. The equations of six lines are listed below:

A	$y = x + 6$	B	$y = -\frac{1}{2}x + 2$
C	$y = 2x - 7$	D	$y = -x + 7$
E	$y = \frac{1}{2}x + 3$	F	$y = x - 9$

(a) Which line is parallel to A ?

(b) Which line is perpendicular to A ?

(c) Which line is perpendicular to C ?

(3 marks)

5. Solve the following equations:

(a) $4x - 9 = 19$ (b) $2(x + 8) = 98$

(c) $\frac{x}{4} + 3 = 20$ (d) $\frac{1}{4}(x - 8) = 13$

(8 marks)

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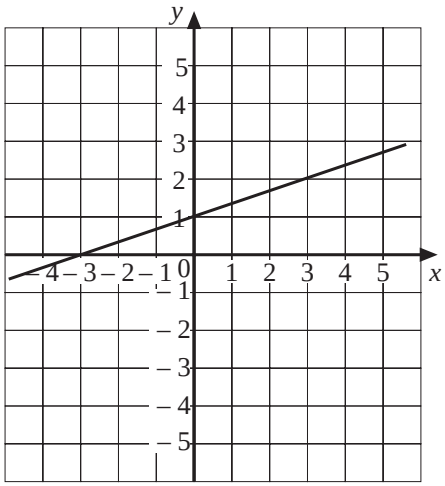
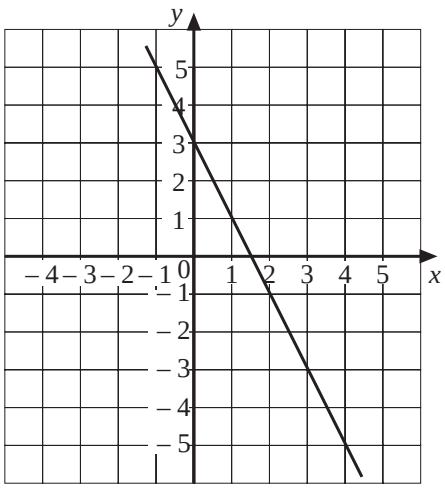
UNIT 5 *Linear Graphs and Equations* Revision Test 5.3 (Express)

1. Determine the equation of each of the following lines:

(a)



(b)



(6 marks)

2. The equations of six lines are listed below:

A $y = 3x - 6$ B $y = \frac{1}{2}x + 4$

C $y = 5x + 3$ D $y = -\frac{1}{5}x + 2$

E $y = -\frac{1}{3}x + 11$ F $y = -\frac{1}{5}x - 8$

(a) Which line is parallel to D ?

(b) Which line is perpendicular to D ?

(c) Which line is perpendicular to A ?

(3 marks)

3. Use a graph to solve the equation

$$3x - 5 = 2x - 2$$

(5 marks)

4. Solve the following equations:

(a) $4x - 11 = 21$ (b) $6(2x - 7) = 24$

(c) $3\left(\frac{x}{5} - 11\right) = 18$ (d) $5x + 6 = 7x - 8$

(7 marks)

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Revision Test 5.3 (Express)

5. Solve the following pair of simultaneous equations by using a graph:

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

(5 marks)

6. Solve the following pair of simultaneous equations algebraically:

$$3x + 2y = 14$$
$$5x + 6y = 26$$

(4 marks)

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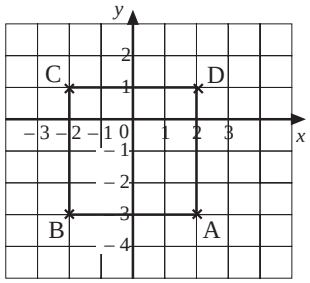
Revision Test 5.1 (Standard) Answers

1. A (2, 4) B1
   B (– 4, 2) B1
   C (3, – 5) B1
   D (– 4, – 5) B1 *(4 marks)*

2. (a) 

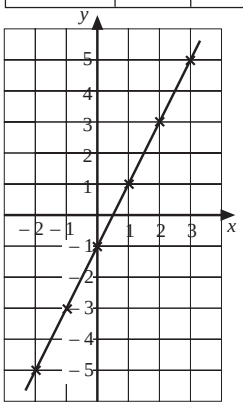
B1 B1 B1 B1

   (b) (2, 1) B1 *(5 marks)*

3. (a)

x	– 2	– 1	0	1	2	3
y	– 5	– 3	– 1	1	3	5

B1 B1 B1

   (b) 

B1 B1 B1 *(6 marks)*

4. (a) $\frac{4}{2} = 2$ M1 A1

   (b) $\frac{2}{4} = \frac{1}{2}$ M1 A1

   (c) $\frac{-4}{4} = -1$ M1 A1 *(6 marks)*

5. (a) $x = 11$ B1
   (b) $x = 64$ B1
   (c) $x = 27$ B1
   (d) $2x = 14$ M1
   $x = 7$ A1
   (e) $5x = 35$ M1
   $x = 7$ A1
   (f) $2x - 18 = 30$
   $2x = 48$ or $x - 9 = 15$ M1
   $x = 24$ $x = 24$ A1 *(9 marks)*

(TOTAL MARKS 30)

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Revision Test 5.2 (Academic) Answers

1. A $(-4,\ 3)$ B1

   B $(-2,\ -3)$ B1

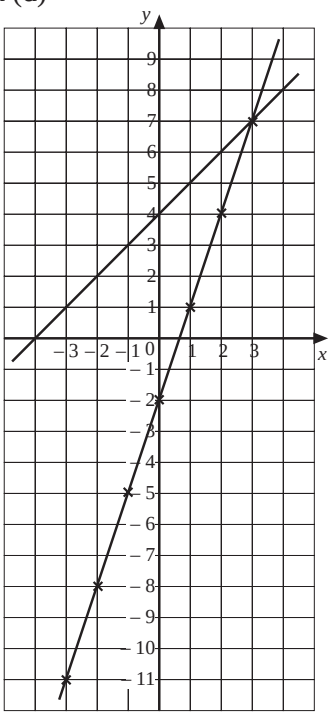
   C $(4,\ -2)$ B1 *(3 marks)*

2. (a)

x	-3	-2	-1	0	1	2	3
y	-11	-8	-5	-2	1	4	7

B2

(b) and (d)



B2

B2

(c)

x	-3	-2	-1	0	1	2	3
y	1	2	3	4	5	6	7

B1 B1

(d) $(3,\ 7)$ B1

(e) $x = 3$ B1 *(10 marks)*

3. (a) Gradient $= 2$ B2

   $y = 2x + 1$ B1

   (b) Gradient $= -\frac{1}{2}$ B2

   $y = -\frac{1}{2}x + 3$ B1 *(6 marks)*

4. (a) F B1

   (b) D B1

   (c) B B1 *(3 marks)*

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Revision Test 5.2 (Academic) ANSWERS

5.	(a)	$4x = 28$	M1	
		$x = 7$	A1	
	(b)	$2x = 82$	M1	
		$x = 41$	A1	
	(c)	$\frac{x}{4} = 17$	M1	
		$x = 68$	A1	
	(d)	$x - 8 = 52$	M1	
		$x = 60$	A1	*(8 marks)*

(TOTAL MARKS 30)

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Revision Test 5.3 (Express) Answers

1. (a) Gradient $= \frac{1}{3}$ B2

$y = \frac{1}{3}x + 1$ B1

(b) Gradient $= -2$ B2

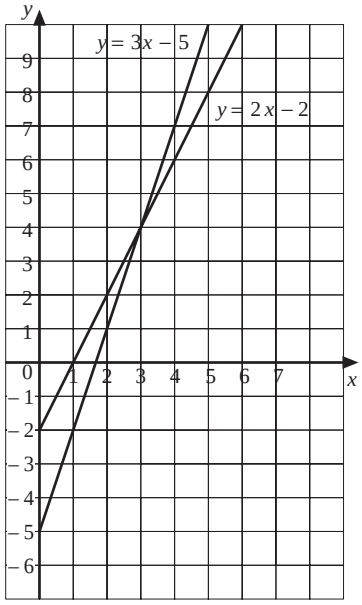
$y = -2x + 3$ B1 *(6 marks)*

2. (a) F B1

(b) C B1

(c) E B1 *(3 marks)*

3.



$y = 3x - 5$ M1 A1

$y = 2x - 2$ M1 A1

$x = 3$ B1 *(5 marks)*

4. (a) $x = 8$ B1

(b) $2x - 7 = 4$ M1

$x = \frac{11}{2}$ A1

(c) $\frac{x}{5} - 11 = 6$ M1

$x = 85$ A1

(d) $2x = 14$ M1

$x = 7$ A1 *(7 marks)*

5. Graph, axes B1

$x + 2y = 5$ B1

$x - y = 2$ B1

Intersection $x = 3,\ y = 1$ B1 B1 *(5 marks)*

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Revision Test 5.3 (Express) ANSWERS

6. $9x + 6y = 42$
$5x + 6y = 26$ } M1

$4x = 16$ A1

$x = 4$ B1

$y = 1$ B1 *(4 marks)*

(TOTAL MARKS 30)

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