

UNIT 14 *Straight Line Graphs***Extra Exercises 14.1**

1. The coordinates of the corners of a shape are listed below:

$$(2, 1), (6, 2), (7, 5), (3, 4)$$

- (a) Draw the shape.
(b) What is the name of the shape?

2. The coordinates of a triangle are listed below:

$$(-5, -2), (-5, 4), (3, 1)$$

- (a) Draw the triangle.
(b) What type of triangle have you drawn?

3. The coordinates of 3 corners of a square are listed below:

$$(-3, -3), (4, -3), (4, 4)$$

Draw the square and write down the coordinates of the other corner.

4. The coordinates of 3 corners of a rectangle are listed below:

$$(-3, -2), (-4, 1), (3, 0)$$

Draw the rectangle and write down the coordinates of the other corner.

5. Plot the following points in order, joining them as you plot them:

$$(-1, 7), (-5, 7), (-7, 4), (-3, 2), (1, 4), (-1, 7)$$

What is the name of the shape you have drawn?

UNIT 14 *Straight Line Graphs***Extra Exercises 14.2**

1. (a) Plot the points with coordinates:
 $(0, 7), (3, 4), (6, 1), (7, 0)$
 - (b) Draw a straight line through these points.
 - (c) What is the relationship between the x - and y -coordinates?

2. (a) Plot the points with coordinates:
 $(1, 2), (2, 4), (3, 6), (4, 8)$
 - (b) Draw a straight line through these points.
 - (c) What is the relationship between the x - and y -coordinates?

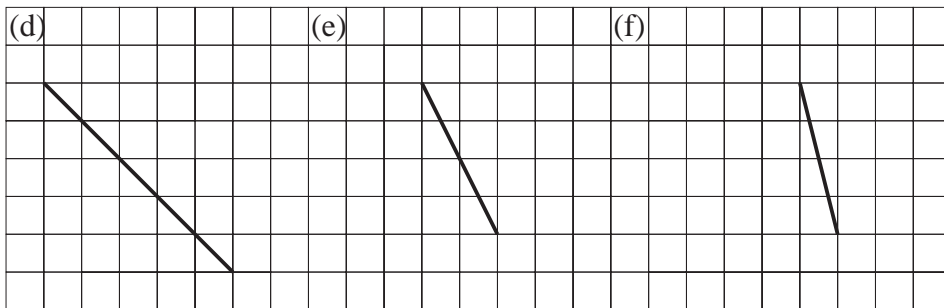
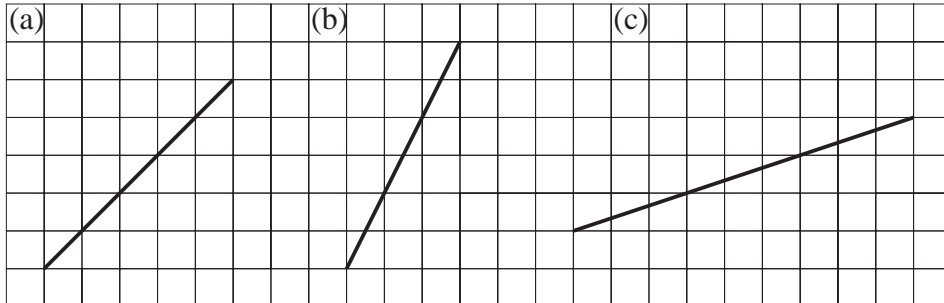
3. (a) Draw a straight line through the points with coordinates
 $(1, 0), (4, 3), (5, 4)$
 - (b) Write down the coordinates of 3 other points that lie on this line.
 - (c) What is the relationship between the x - and y -coordinates?

4. (a) Draw a straight line that passes through the points with coordinates
 $(1, 9), (6, 4), (7, 3)$.
 - (b) Write down the coordinates of 3 other points on this line.
 - (c) What is the relationship between the x - and y -coordinates?

UNIT 14 *Straight Line Graphs*

Extra Exercises 14.3

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



2. (a) Copy and complete the following table for $y = x + 5$.

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

(b) Draw the line with equation $y = x + 5$.

3. (a) Copy and complete the following table for $y = 3x - 4$.

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

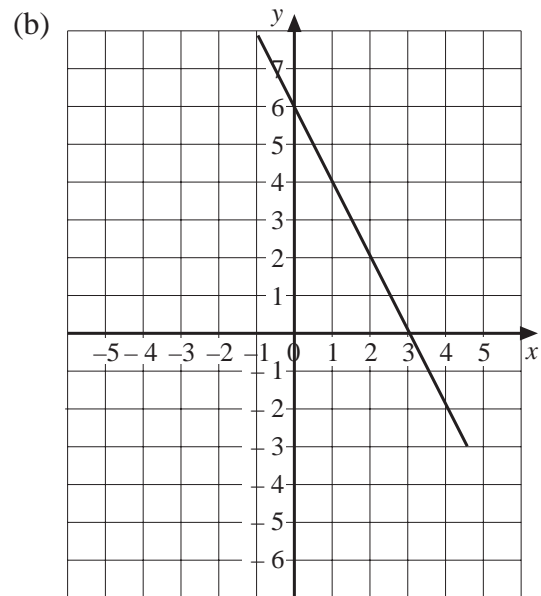
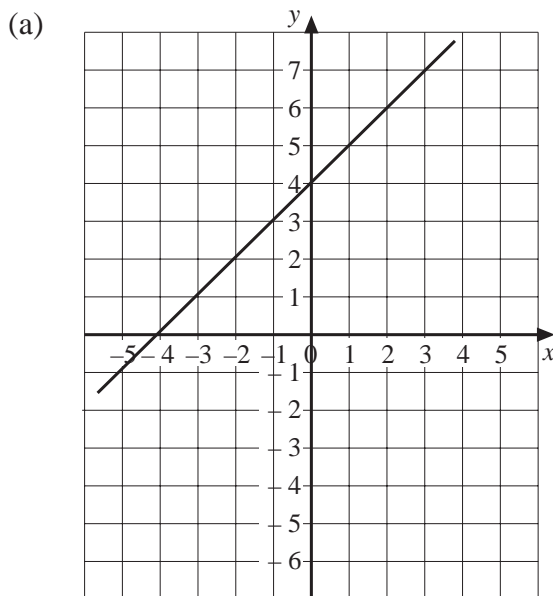
(b) Draw the line with equation $y = 3x - 4$.

UNIT 14 *Straight Line Graphs*

Extra Exercises 14.4

1. The points $(0, 1)$, $(3, 7)$ and $(4, 9)$ all lie on a straight line.
- Draw this straight line.
 - What is the *gradient* of this line?
 - What is the *intercept* of this line?
 - Write down the *equation* of this line.

2. Write down the equation of each of the lines shown below:



3. (a) Draw a line that passes through the points with coordinates below:
 $(1, 7)$, $(3, 5)$, $(5, 3)$
- What is the *gradient* of this line?
 - What is the *intercept* of this line?
 - Write down the *equation* of the line.

4. What is the *gradient* and the *intercept* of the lines with the following equations:

(a) $y = 3x - 7$

(b) $y = 7x + 2$

(c) $y = \frac{1}{2}x + 1$

(d) $y = -2x + 1$

UNIT 14 *Straight Line Graphs***Extra Exercises 14.5**

1. Determine the equation of each of the straight lines that passes through the point with coordinates $(0, 0)$ and:
 - (a) $(2, 8)$
 - (b) $(4, 2)$
 - (c) $(2, 10)$

2. Determine the equation of each of the straight lines that pass through the two points:
 - (a) $(1, 1)$ and $(2, 3)$
 - (b) $(-2, 2)$ and $(3, 7)$
 - (c) $(0, 3)$ and $(6, 5)$
 - (d) $(1, 6)$ and $(4, 0)$
 - (e) $(0, 3)$ and $(3, -3)$
 - (f) $(0, -2)$ and $(4, -4)$

Extra Exercises 14.1 Answers

1. (b) Parallelogram
2. (b) Isosceles triangle
3. $(-3, 4)$
4. $(2, 3)$
5. Pentagon

Extra Exercises 14.2 Answers

1. (c) $x + y = 7$ or $y = 7 - x$
2. (c) $y = 2x$
3. (b) e.g. $(0, -1)$, $(2, 1)$, $(3, 2)$, $(6, 5)$
 (c) $y = x - 1$
4. (b) e.g. $(0, 10)$, $(2, 8)$, $(3, 7)$, $(4, 6)$, $(5, 5)$, $(8, 2)$, $(9, 1)$, $(10, 0)$
 (c) $x + y = 10$ or $y = 10 - x$

Extra Exercises 14.3 Answers

1. (a) 1 (b) 2 (c) $\frac{1}{3}$
 (d) -1 (e) -2 (f) -4

2. (a)

x	-3	-2	-1	0	1	2	3
y	2	3	4	5	6	7	8

3. (a)

x	-3	-2	-1	0	1	2	3
y	-13	-10	-7	-4	-1	2	5

Extra Exercises 14.4 Answers

1. (b) 2 (c) 1 (d) $y = 2x + 1$
2. (a) $y = x + 4$ (b) $y + 2x = 6$
3. (b) -1 (c) 8 (d) $y = -x + 8$ or $x + y = 8$
4. (a) 3 , -7
(b) 7 , 2
(c) $\frac{1}{2}$, 1
(d) -2 , 1

Extra Exercises 14.5 Answers

1. (a) $y = 4x$ (b) $y = \frac{1}{2}x$ (c) $y = 5x$
2. (a) $y = 2x - 1$ (b) $y = x + 4$
(c) $y = \frac{1}{3}x + 3$ (d) $y = -2x + 8$
(e) $y = -2x + 3$ (f) $y = -\frac{1}{2}x - 2$