

KS3 – Graphs

Section A – Coordinates

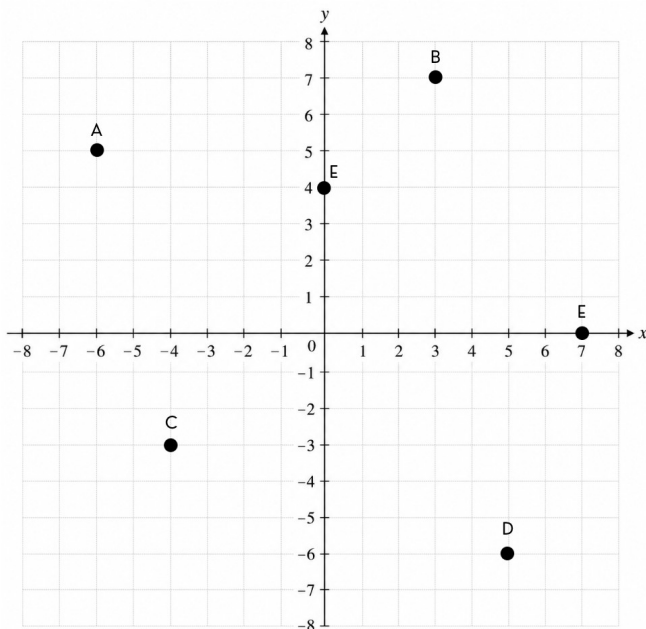
Q1 (4 marks)

Answer these theory questions.

- In what order are coordinates written?
- What does the first number in a coordinate tell you?
- What does the second number in a coordinate tell you?
- What are the coordinates of the origin?

Q2 (6 marks)

Use the coordinate grid to write down the coordinates of points A–F.



Q3 (6 marks)

Plot and label these points on the blank coordinate grid.

a) A(-7, 2)

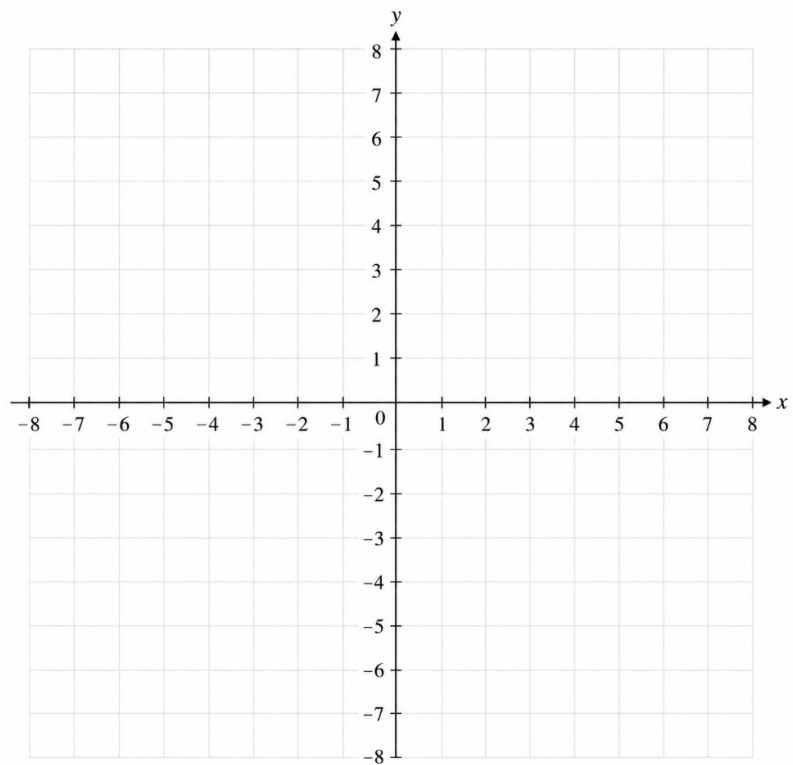
b) B(4, 6)

c) C(-5, -5)

d) D(6, -3)

e) E(0, -6)

f) F(3, 0)



Q4 (4 marks)

Without drawing a graph, state which quadrant each point lies in.

a) (4, 7)

b) (-3, 6)

c) (-5, -2)

d) (6, -4)

Section B – Plotting Linear Graphs

Q5 (4 marks)

Answer these theory questions.

- a) What is the general form of the equation of a straight line?
- b) What does m represent?
- c) What does c represent?
- d) What does it mean if a point lies on a line?

Q6 (5 marks)

Complete the coordinate values for $y = 2x + 1$.

- a) $x = -3$
- b) $x = -1$
- c) $x = 0$
- d) $x = 2$
- e) $x = 3$

Q7 (5 marks)

Complete the coordinate values for $y = -x + 2$.

a) $x = -4$

b) $x = -2$

c) $x = 0$

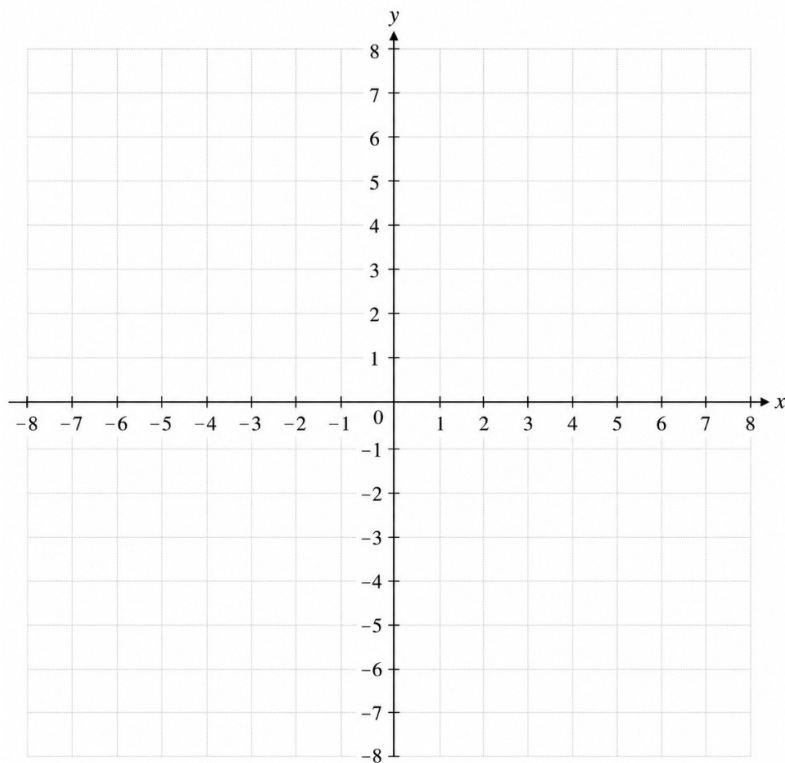
d) $x = 3$

e) $x = 6$

Q8 (3 marks)

On a blank -8 to 8 coordinate grid, plot $y = 2x - 3$ for $x = -2, -1, 0, 1, 2, 3$, then join the points with a straight line.

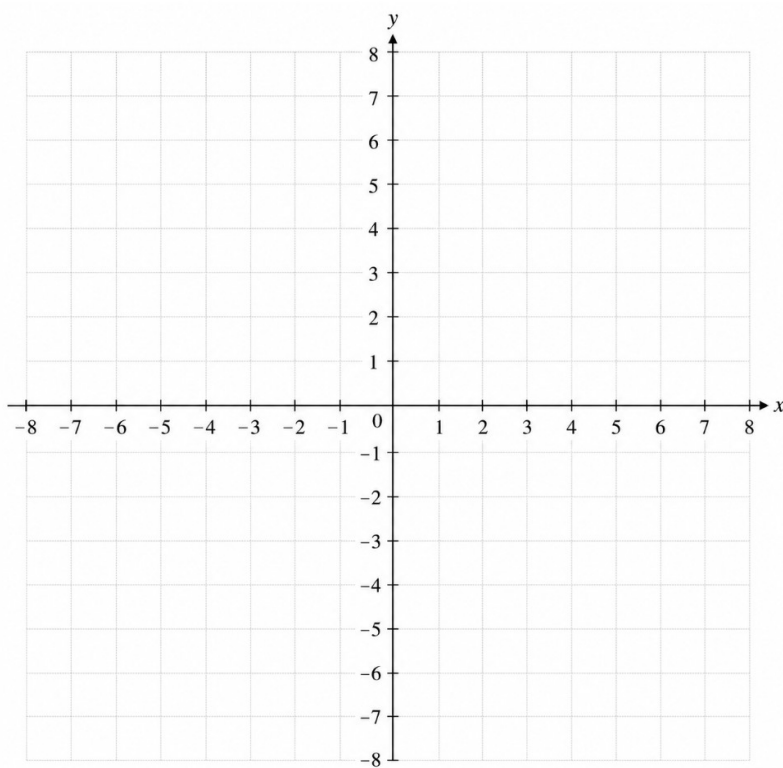
Write down the coordinates you plotted before drawing the line.



Q9 (3 marks)

On a blank -8 to 8 coordinate grid, plot $y = -2x + 4$ for $x = -2, -1, 0, 1, 2, 3$, then join the points with a straight line.

Write down the coordinates you plotted before drawing the line.



Section C – Gradient

Q10 (3 marks)

Answer these theory questions.

- a) What does the gradient tell you about a straight line?
- b) Write the calculation used to find gradient from two points.
- c) What sign does the gradient of a line that slopes down from left to right have?

Q11 (4 marks)

Find the gradient of the line through each pair of points.

- a) (1, 2) and (3, 6)
- b) (-1, 1) and (2, 7)
- c) (0, -2) and (4, 6)
- d) (-3, -4) and (1, 4)

Q12 (4 marks)

Find the gradient of the line through each pair of points.

- a) (1, 7) and (4, 1)
- b) (-2, 5) and (2, -3)
- c) (-5, -1) and (-1, -5)
- d) (2, -6) and (6, -8)

Q13 (4 marks)

Find the gradient of the line through each pair of points.

a) $(-6, -5)$ and $(-2, 3)$

b) $(-4, 6)$ and $(2, -3)$

c) $(-7, 4)$ and $(1, 0)$

d) $(-3, -6)$ and $(5, 2)$

Challenge

Q14 (3 marks)

A line passes through $(-5, 7)$ and $(3, -1)$.

a) Find its gradient.

b) Is the line increasing or decreasing?

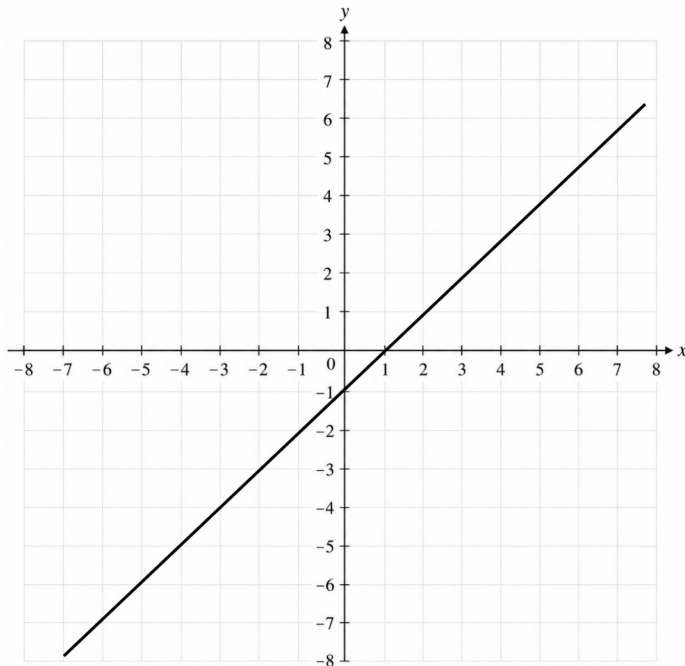
c) Explain how the sign of your gradient confirms your answer.

Section D – $y = mx + c$

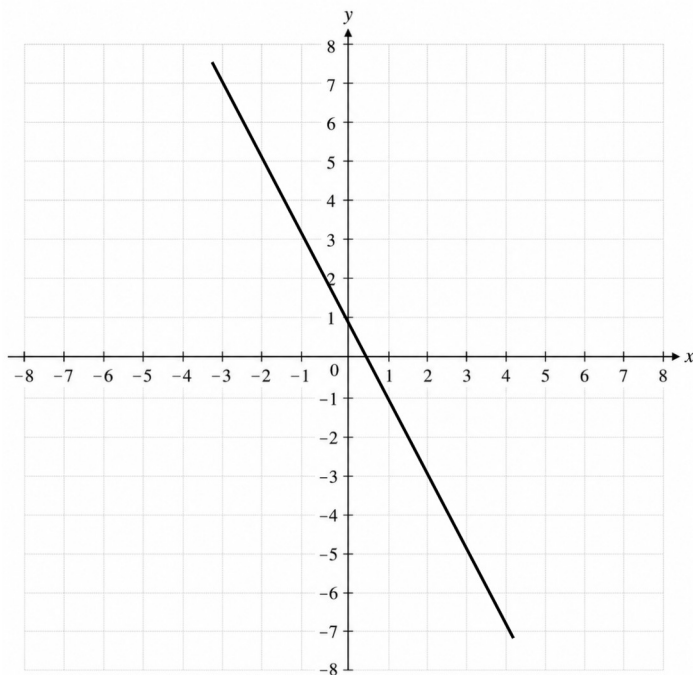
Q15 (4 marks)

For each line shown on a graph, find the gradient and y-intercept, then write its equation in the form $y = mx + c$.

a)



b)



Q16 (4 marks)

For each pair of coordinates, one point is the y-intercept. Find the gradient and write the equation of the line.

a) (0, 3) and (2, 7)

b) (0, -2) and (3, 4)

c) (0, 5) and (4, -3)

d) (0, -4) and (-2, 2)

Q17 (4 marks)

Find the equation of the straight line through each pair of coordinates.

a) (1, 3) and (3, 7)

b) (2, 1) and (5, 7)

c) $(-2, 5)$ and $(2, -3)$

d) $(-3, -1)$ and $(1, 7)$

Q18 (4 marks)

Find the equation of the straight line through each pair of coordinates.

a) $(-4, -5)$ and $(2, 4)$

b) $(-5, 4)$ and $(3, 0)$

c) $(2, -7)$ and $(6, 1)$

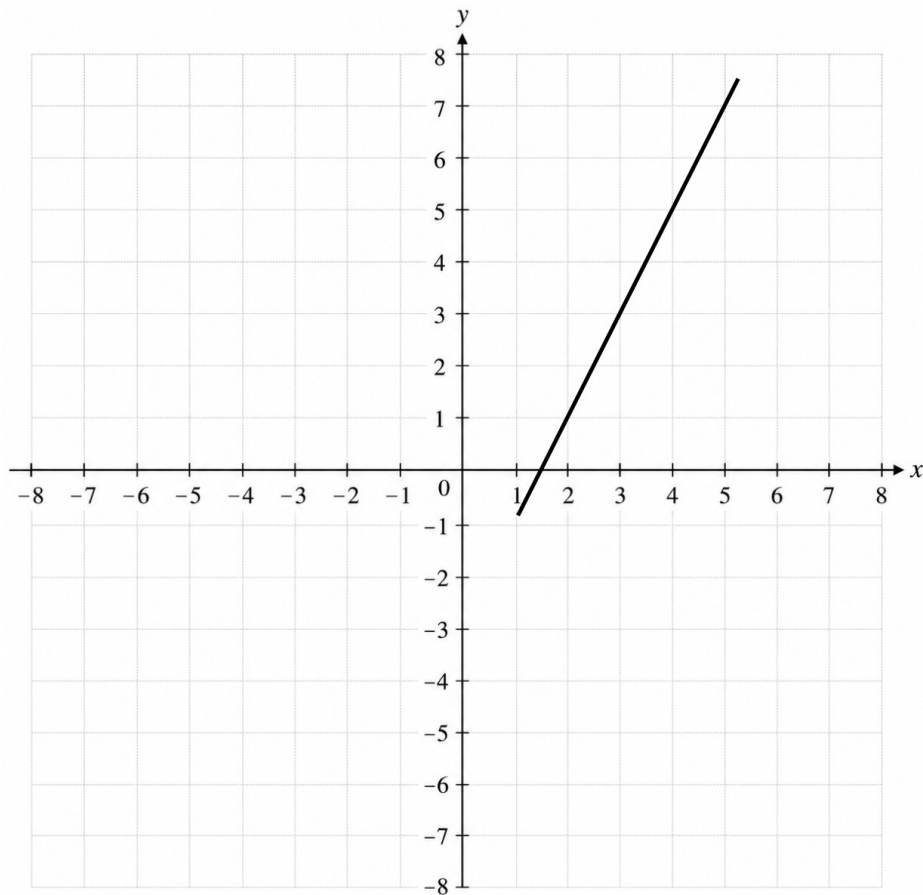
d) $(-6, 1)$ and $(-2, -5)$

Challenge

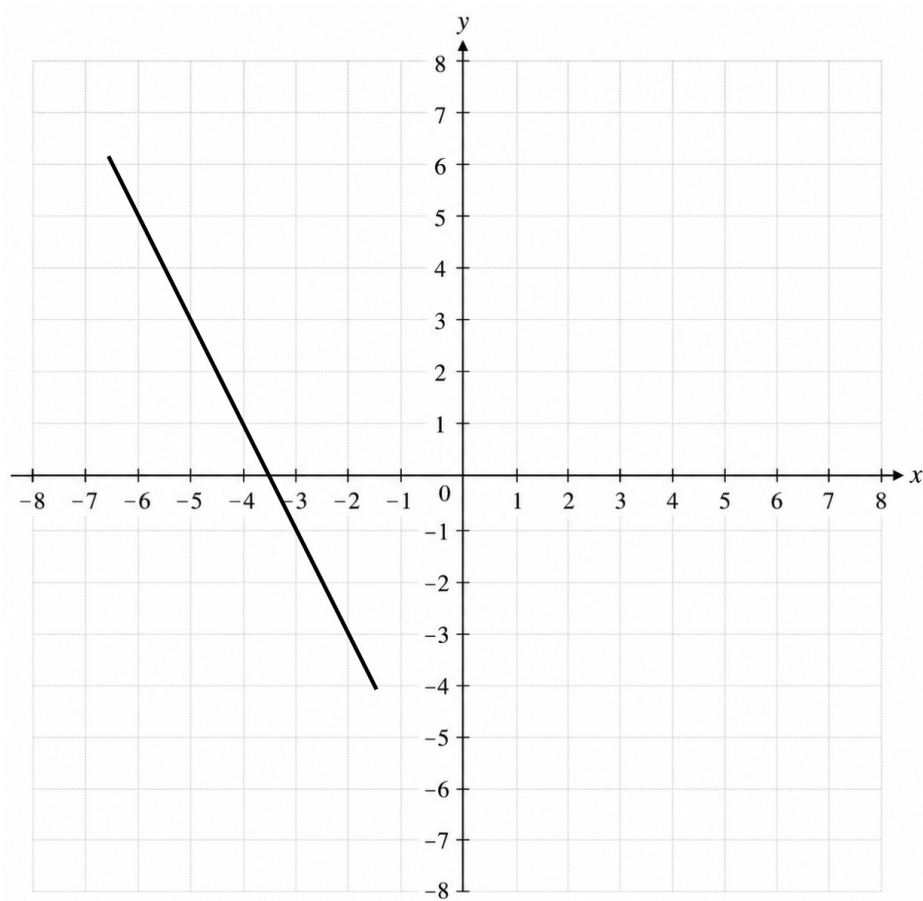
Q19 (4 marks)

For each graph, choose two clear points on the line, calculate the gradient, work out the y-intercept algebraically, and write the equation.

a)



b)



Total: ____ / 78

Percentage: ____%