Year 9 Linear and Quadratic Graphs – Foundation

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Answers and worked solutions · 10 questions

A. Graph skills

1. **(5, 0) and (0, 2)**

On the x-axis y = 0: 2x = 10, x = 5
On the y-axis x = 0: 5y = 10, y = 2

2. **(4, 0) and (0, 8)**

On the x-axis y = 0: 4x = 16, x = 4
On the y-axis x = 0: 2y = 16, y = 8

3. **y = −(2/5)x − 12/5; gradient −2/5**

Subtract 2x: 5y = −2x − 12
Divide by 5: y = −(2/5)x − 12/5

4. **y = −x + 9/2; gradient −1**

Subtract 2x: 2y = −2x + 9
Divide by 2: y = −x + 9/2

5. **y = −(3/2)x − 7/2; gradient −3/2**

Subtract 3x: 2y = −3x − 7
Divide by 2: y = −(3/2)x − 7/2

6. **−5/2**

Gradient = change in y ÷ change in x = (−4 − 1) ÷ (4 − 2)
= −5 ÷ 2 = −5/2

7. **5/3**

Gradient = change in y ÷ change in x = (7 − 2) ÷ (5 − 2)
= 5 ÷ 3 = 5/3

8. **at (−6, 0) and (6, 0)**

On the x-axis y = 0: $x^2 = 36$
x = 6 or x = −6

9. **9x + 5y = 90**

Total = cost of the x items + cost of the y items
9x + 5y = 90

10. **y = −(1/2)x − 1**

It crosses the y-axis at (0, −1), so c = −1
From (−4, 1) to (4, −3): gradient = −4 ÷ 8 = −1/2, so y = −(1/2)x − 1