ENGLAND GCSE MATHS AQA FOUNDATION · UNIT 4 · 25 QUESTIONS

Algebra, Graphs — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **A sunflower grows 4 cm every week. The gradient of its height-time graph is**

- **A** 3
- **B** 5
- **C** 4
- **D** 8

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2 **A passenger aeroplane climbs 300 m for every 3000 m it travels forwards. The gradient of its flight path is**

- **A** $\frac{1}{10}$
- **B** $\frac{2}{15}$
- **C** 10
- **D** $\frac{3}{40}$

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3 **A kite string has gradient $\frac{3}{4}$. It goes 12 m across. How high is the kite?**

- **A** 6
- **B** 12
- **C** 15
- **D** 9

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4 A wooden footbridge rises 2 m over a run of 6 m. Its gradient is

- **A** $\frac{2}{3}$
- **B** 3
- **C** $\frac{1}{4}$
- **D** $\frac{1}{3}$

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5 A ladder leans against a wall. It rises 3 m for every 2 m it goes across. The gradient of the ladder is

- **A** 1
- **B** 2
- **C** $\frac{3}{2}$
- **D** $\frac{2}{3}$

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6 **A bicycle path falls 2 m for every 5 m it goes across. The gradient of the path is**

- A $\frac{2}{5}$
- B -2/5
- C -3/5
- D -5/2

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7 **A line is parallel to y = 2x - 3. The gradient of the parallel line is**

- A $\frac{1}{2}$
- B 2
- C -2
- D 3

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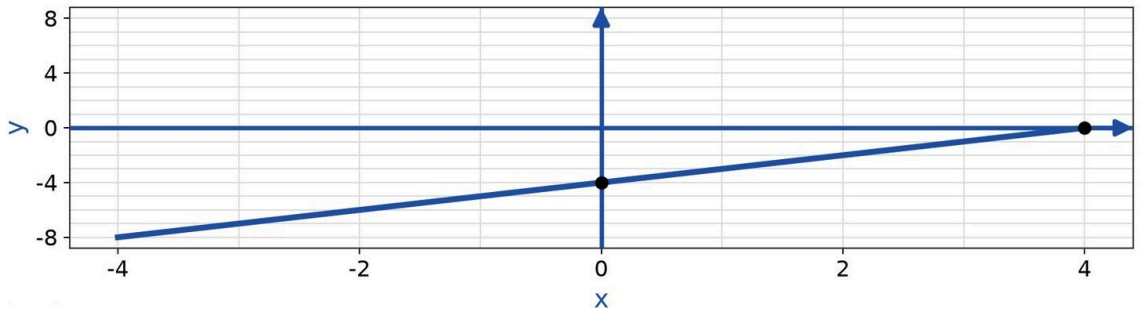
8 **The graph below shows a straight line through (0, -4). The gradient of the line is**



A -4

B 1

C -1

D 2

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9 **A line is perpendicular to y = 1/2x + -3. The gradient of the perpendicular line is**

A $\frac{1}{2}$

B -1/2

C 2

D -2

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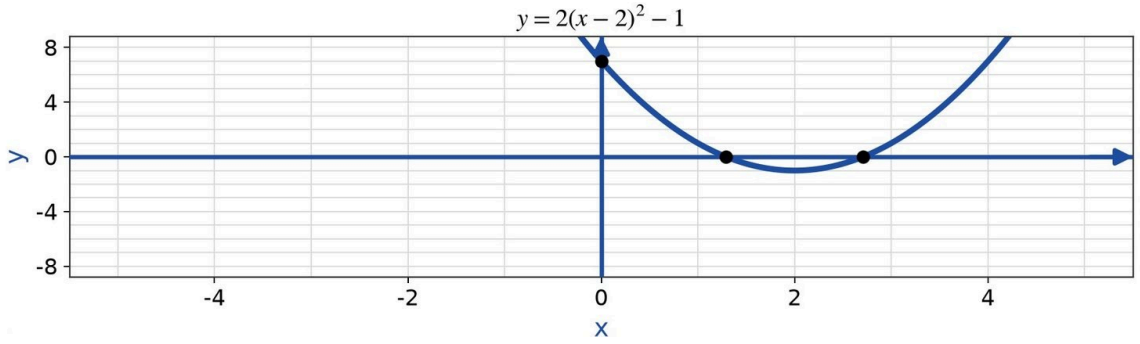
10 **The graph below shows $y = 2(x - 2)^2 - 1$. The vertex of the graph is**



A (2, 1)

B (1, -2)

C (2, -1)

D (-2, -1)

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11 **The midpoint of the line joining (1, 3) and (3, 9) is**

- **A** (1, 3)
- **B** (1, 9)
- **C** (2, 6)
- **D** (3, 3)

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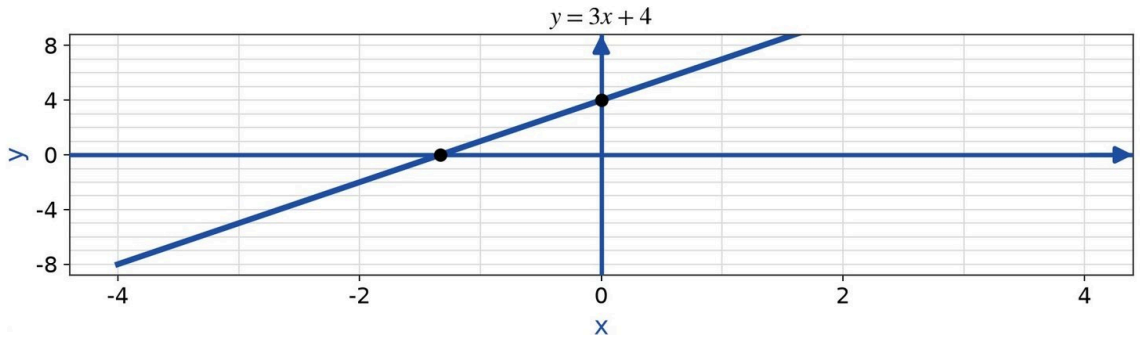
12 **The graph below shows y = 3x + 4. The value of y when x = 2 is**



A 10

B 2

C 13

D 7

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13 **The y-intercept of y = 3x + 6 is**

A 6

B -6

C 9

D 3

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14 **For the equation y = -2x + 1, the value of y when x = 5 is**

A -11

B -9

C -8

D -7

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15 **A line is parallel to y = 5x + 4. The gradient of the parallel line is**

- **A** $\frac{1}{5}$
- **B** 6
- **C** -5
- **D** 5

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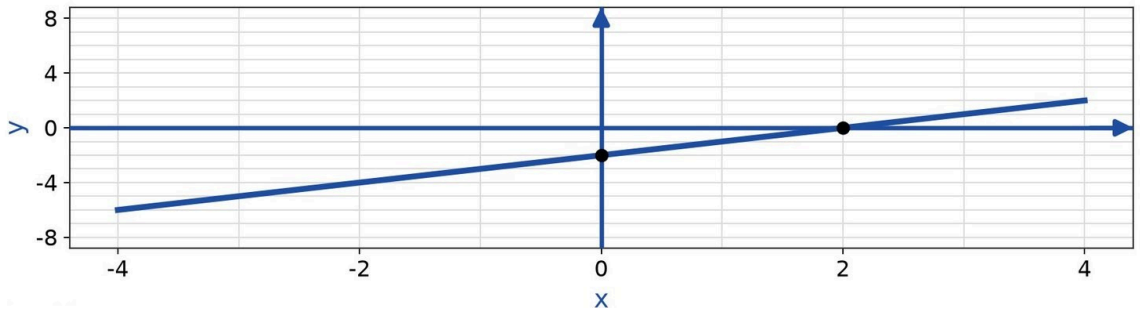
16 **The graph below shows a straight line through (0, -2). The gradient of the line is**



A 1

B -1

C 2

D -2

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17 **A straight line passes through (0, 5) and (3, 14). Its gradient is**

- **A** 3
- **B** 12
- **C** 4
- **D** $\frac{1}{3}$

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18 **A line is perpendicular to y = 1/4x + -3. The gradient of the perpendicular line is**

- **A** -1/4
- **B** $\frac{1}{4}$
- **C** 4
- **D** -4

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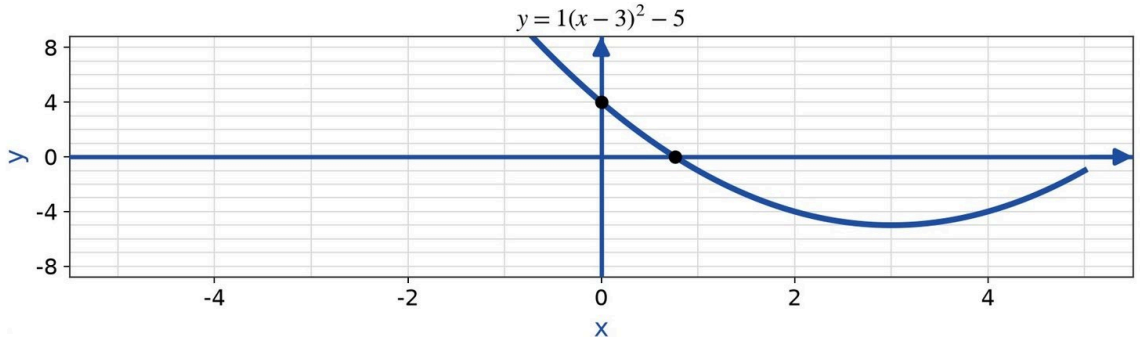
19 **The graph below shows $y = (x - 3)^2 - 5$. The vertex of the graph is**



A (3, 5)

B (-3, -5)

C (3, -5)

D (2, -6)

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20 The midpoint of the line joining (1, 0) and (7, 4) is

- A (1, 4)
- B (4, 2)
- C (7, 0)
- D (3, 2)

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21 The y-intercept of y = 2x - 3 is

- A 3
- B -3
- C 2
- D -1

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22 For the equation y = 3x + 2, the value of y when x = 5 is

- A 20
- B 17
- C 14
- D 13

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23 A line is parallel to y = -2x - 2. The gradient of the parallel line is

- A -1
- B 2
- C -2
- D $\frac{1}{2}$

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24 **A straight line passes through (2, 3) and (3, 6). Its gradient is**

- **A** 6
- **B** $\frac{1}{3}$
- **C** 4
- **D** 3

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25 **A line is perpendicular to y = 1/2x + 2. The gradient of the perpendicular line is**

- **A** -2
- **B** 2
- **C** -1/2
- **D** $\frac{1}{2}$

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ANSWER KEY

1.	C	**10.**	C	**19.**	C
2.	A	**11.**	C	**20.**	B
3.	D	**12.**	A	**21.**	B
4.	D	**13.**	A	**22.**	B
5.	C	**14.**	B	**23.**	C
6.	B	**15.**	D	**24.**	D
7.	B	**16.**	A	**25.**	A
8.	B	**17.**	A		
9.	D	**18.**	D		

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