ENGLAND GCSE MATHS OCR 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 bicycle path falls 3 m for every 5 m it goes across. The gradient of the path is**

- **A** -3/5
- **B** -5/3
- **C** $\frac{3}{5}$
- **D** -4/5

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2 **A ladder leans against a wall. It rises 5 m for every 4 m it goes across. The gradient of the ladder is**

- **A** $\frac{5}{4}$
- **B** $\frac{4}{5}$
- **C** 1
- **D** $\frac{3}{2}$

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3 **A sunflower grows 3 cm every week. The gradient of its height-time graph is**

- **A** 6
- **B** 2
- **C** 4
- **D** 3

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4 **A wooden footbridge rises 2 m over a run of 8 m. Its gradient is**

- **A** 4
- **B** $\frac{1}{4}$
- **C** $\frac{1}{5}$
- **D** $\frac{1}{2}$

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5 **A passenger aeroplane climbs 300 m for every 5000 m it travels forwards. The gradient of its flight path is**

- **A** $\frac{2}{25}$
- **B** $\frac{1}{20}$
- **C** $\frac{3}{50}$
- **D** $\frac{50}{3}$

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6 A kite string has gradient $\frac{5}{4}$. It goes 12 m across. How high is the kite?

- A 20
- B 12
- C 15
- D 10

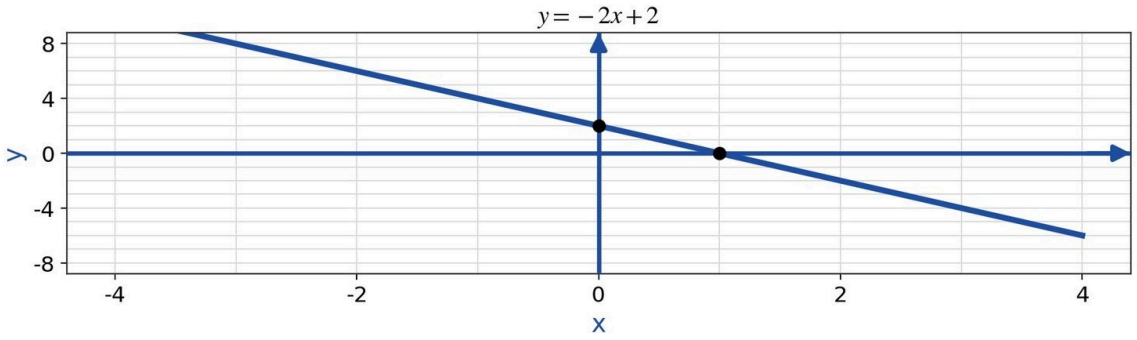
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7 A line is perpendicular to y = 1/2x + 0. The gradient of the perpendicular line is

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

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8 **The graph shows y = -2x + 2. The value of y when x = 2 is**



A -4

B -2

C -6

D 0

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9 **The y-intercept of y = 2x - 5 is**

A 5

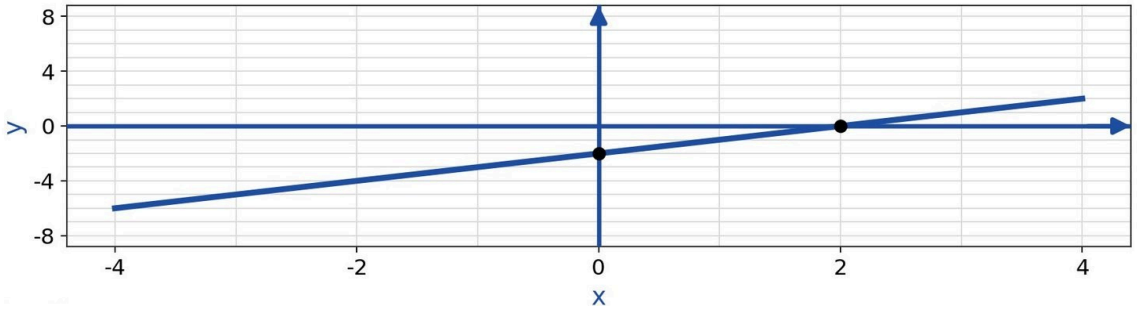
B -5

C 2

D -3

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



A -1

B 2

C -2

D 1

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11 For the equation y = -2x - 4, the value of y when x = 4 is

- A -4
- B -10
- C -14
- D -12

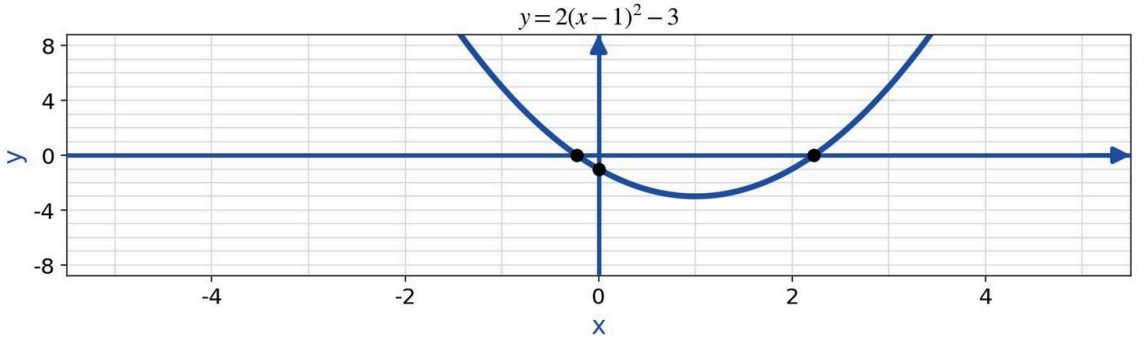
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12 A line is parallel to y = -2x. The gradient of the parallel line is

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

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13 **The graph shows $y = 2(x - 1)^2 - 3$. The vertex of the graph is**



A (1, -3)

B (1, 3)

C (0, -4)

D (-1, -3)

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14 **The midpoint of the line joining (4, 3) and (6, 5) is**

- **A** (4, 5)
- **B** (6, 3)
- **C** (1, 1)
- **D** (5, 4)

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15 **A straight line passes through (0, 3) and (2, 9). Its gradient is**

- **A** 4
- **B** 3
- **C** 8
- **D** $\frac{1}{3}$

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16 **A line is perpendicular to y = 1/4x + 0. The gradient of the perpendicular line is**

A $\frac{1}{4}$

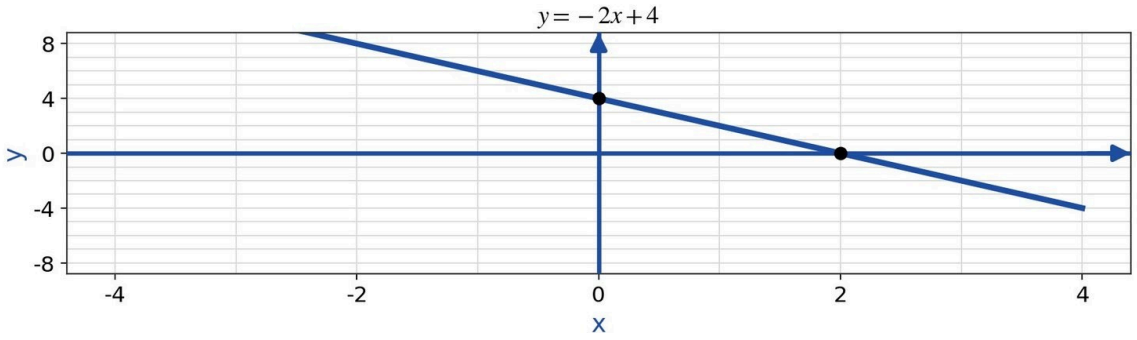
B 4

C -1/4

D -4

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



A 0

B -4

C -2

D -10

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18 **The y-intercept of y = 3x - 3 is**

A -3

B -1

C 0

D 3

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19 **For the equation y = -2x + 2, the value of y when x = 4 is**

A -4

B -6

C -8

D -10

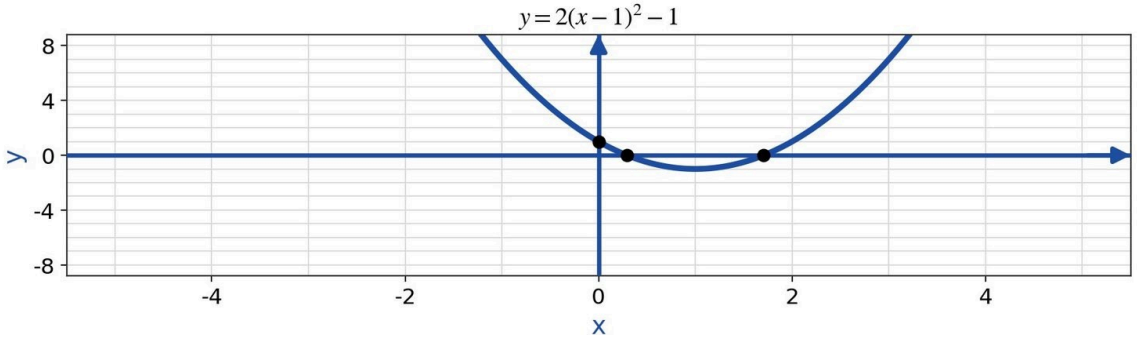
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20 **A line is parallel to y = 4x - 2. The gradient of the parallel line is**

- **A** 5
- **B** -4
- **C** $\frac{1}{4}$
- **D** 4

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



A (1, 1)

B (-1, -1)

C (0, -2)

D (1, -1)

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22 **The midpoint of the line joining (0, 2) and (6, 6) is**

- **A** (3, 2)
- **B** (3, 4)
- **C** (0, 6)
- **D** (6, 2)

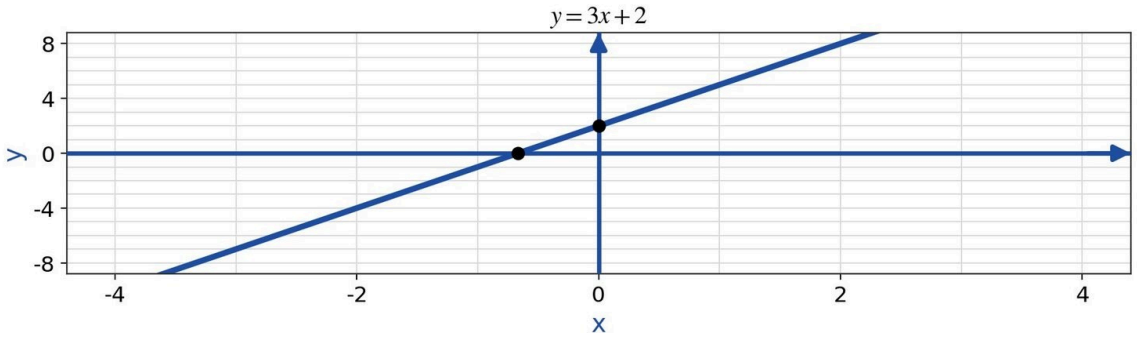
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23 **A line is perpendicular to y = 1/4x + -3. The gradient of the perpendicular line is**

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

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24 **The graph shows y = 3x + 2. The value of y when x = -3 is**



A -7

B -11

C -4

D -10

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25 **The y-intercept of y = 2x + 6 is**

A -6

B 2

C 8

D 6

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ANSWER KEY

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

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