ENGLAND GCSE MATHS EDEXCEL HIGHER · 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 passenger aeroplane climbs 900 m for every 2000 m it travels forwards. The gradient of its flight path is**

A $\frac{1}{2}$

B $\frac{9}{20}$

C $\frac{3}{10}$

D $\frac{20}{9}$

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2 **A ladder leans against a wall. It rises 4 m for every 3 m it goes across. The gradient of the ladder is**

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

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3 **A kite string has gradient $\frac{2}{3}$. It goes 6 m across. How high is the kite?**

- **A** 8
- **B** 2
- **C** 6
- **D** 4

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4 **A sunflower grows 5 cm every week. The gradient of its height-time graph is**

- **A** 4
- **B** 6
- **C** 10
- **D** 5

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5 **A wooden footbridge rises 3 m over a run of 6 m. Its gradient is**

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

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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 -5/2

B $\frac{2}{5}$

C -3/5

D -2/5

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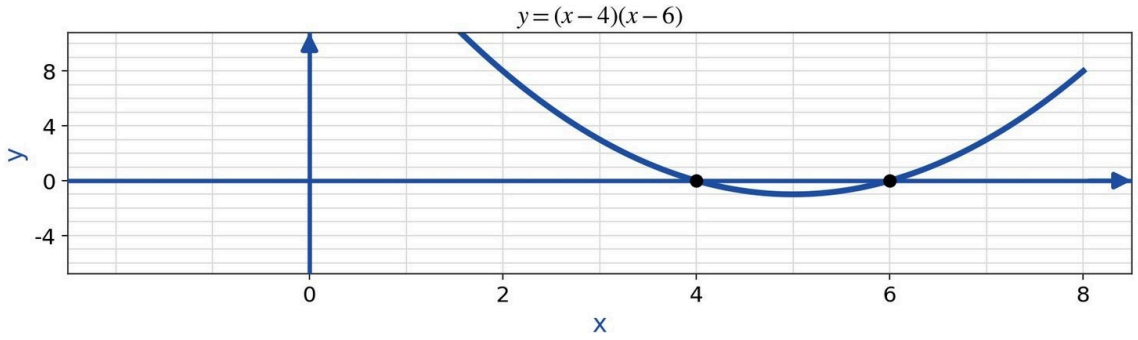
7 **The graph shows y = x² - 10x + 24. The roots of the equation x² - 10x + 24 = 0 are**



A x = -4 and x = -6

B x = 5 and x = 6

C x = 4 and x = 6

D x = 4 and x = -6

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8 **The midpoint of the line joining (1, 2) and (5, 4) is**

- A (3, 3)
- B (5, 2)
- C (2, 1)
- D (1, 4)

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9 **The turning point of $y = (x + 2)^2 + -3$ is**

- A (-2, 3)
- B (-2, -3)
- C (2, -3)
- D (-3, -4)

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10 The graph of $y = 2^x$ passes through the point with $x = 4$. The value of y is

- **A** 32
- **B** 15
- **C** 8
- **D** 16

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

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

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12 **The y-intercept of y = -3x + 2 is**

A 2

B -3

C -2

D -1

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13 **The graph of y = cos x crosses the y-axis at y =**

A 0

B 1

C 90

D -1

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14 The graph of y = f(x - 5) is the graph of y = f(x) moved

- A 5 units down
- B 5 units up
- C 5 units to the left
- D 5 units right

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15 For the equation y = 3x + 1, the value of y when x = 4 is

- A 13
- B 10
- C 16
- D 11

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16 **The gradient of the curve $y = x^2$ at the point where $x = 3$ is**

A 9

B 6

C 4

D 8

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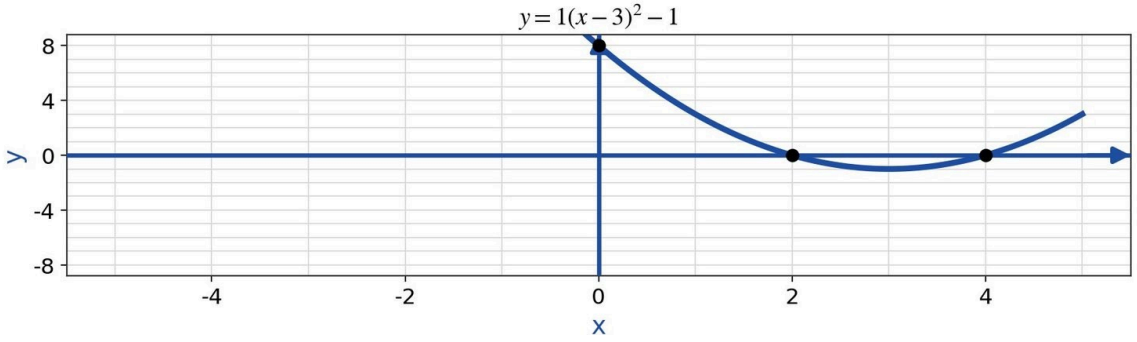
17 **The graph shows y = (x - 3)² - 1. The vertex of the graph is**



A (3, 1)

B (3, -1)

C (-3, -1)

D (2, -2)

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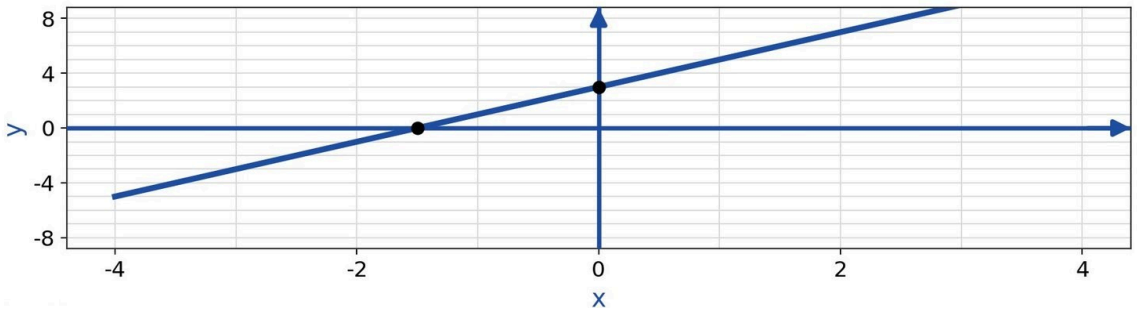
18 **The graph shows a straight line through (0, 3). The gradient of the line is**



A 3

B 2

C 4

D -2

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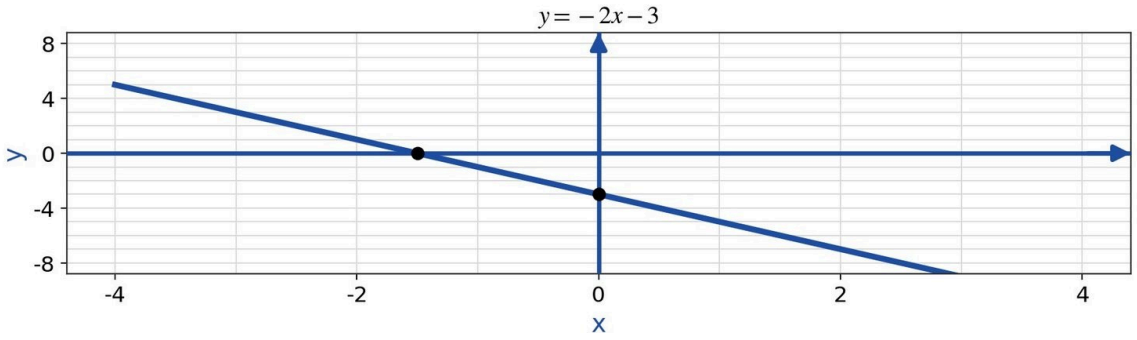
19 **The graph shows y = -2x - 3. The value of y when x = 3 is**



A -11

B -7

C -3

D -9

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20 The circle $x^2 + y^2 = 49$ has radius

- A 14
- B 8
- C 7
- D 49

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21 A line is parallel to $y = -2x + 2$. The gradient of the parallel line is

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

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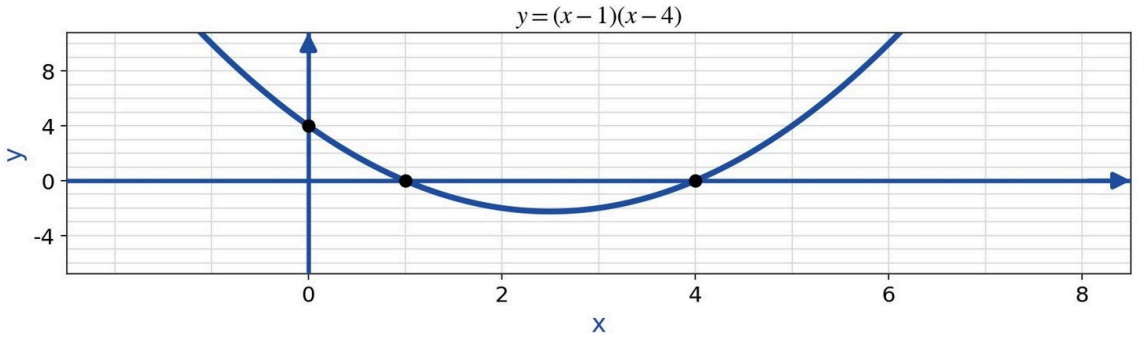
22 **The graph shows y = x² - 5x + 4. The roots of the equation x² - 5x + 4 = 0 are**



A x = 2 and x = 4

B x = 1 and x = -4

C x = -1 and x = -4

D x = 1 and x = 4

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23 The midpoint of the line joining (1, 1) and (3, 3) is

- A (3, 1)
- B (2, 2)
- C (1, 3)
- D (1, 1)

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24 The turning point of $y = (x - 4)^2 + -4$ is

- A (-4, -4)
- B (3, -5)
- C (4, -4)
- D (4, 4)

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25 **The graph of $y = 2^x$ passes through the point with $x = 3$. The value of y is**

A 16

B 6

C 8

D 7

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ANSWER KEY

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

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