ENGLAND GCSE MATHS AQA HIGHER · UNIT 5 · 25 QUESTIONS

Algebra, Equations and Inequalities — 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 costs x pounds. After a £50 discount it costs £80. The value of x is**

- A £130
- B £140
- C £30
- D £80

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2 **A sandwich costs x pounds. 4 sandwiches cost £8. The value of x is**

- A £8
- B £2
- C £3
- D £1

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3 **A guitar costs x pounds. Two guitars and a £10 case cost £100. The value of x is**

- A £40
- B £45
- C £90
- D £50

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4 **Two hardcover books and one calculator cost £16. One hardcover book and two calculators cost £17. The cost of one calculator is**

A £8

B £6

C £5

D £7

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5 **A cup of coffee costs x pounds. 3 cups of coffee cost £12. The value of x is**

A £3

B £12

C £5

D £4

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6 **A tennis ball costs x pounds. A tube of 4 tennis balls costs £16. The value of x is**

- A £16
- B £3
- C £4
- D £5

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7 **Solve 3x + 6 = x + 20**

- A x = 9
- B x = 8
- C x = 7
- D x = 6

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8 **Solve 5x + 8 = 23**

A x = 2

B x = 5

C x = 4

D x = 3

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9 **Use the quadratic formula to solve $x^2 - 9x + 20 = 0$. Give the larger solution.**

A x = 4

B x = 5

C x = 7

D x = 6

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10 **Solve the simultaneous equations $y = x^2$ and $y = 3x - 2$. Give the larger value of x.**

- **A** x = 3
- **B** x = -1
- **C** x = 1
- **D** x = 2

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11 **The iteration $x_{n+1} = x_n^2 + 3/4$ starts with $x_1 = 2$. Work out x_2.**

- **A** 1.75
- **B** 4
- **C** 1.25
- **D** 2.5

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12 **A number multiplied by 5, plus 8, is 53. What is the number?**

- A 10
- B 9
- C 8
- D 11

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13 **Solve the inequality $x^2 < 16$**

- A $x < 4$
- B $x < -4$ or $x > 4$
- C $-4 < x < 4$
- D $-4 < x$

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14 **Solve the inequality $4x + 7 < 19$**

- A $x \leq 3$
- B $x < 3$
- C $x > 3$
- D $x < 4$

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15 **Solve $x^2 + 2x - 15 = 0$**

- A $x = -3$ or $x = 6$
- B $x = -3$ or $x = 5$
- C $x = -3$
- D $x = 3$ or $x = -5$

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16 **Solve 5(x + 6) = 50**

A x = 3

B x = 6

C x = 4

D x = 10

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17 **Which inequality is shown by the integers x that satisfy x > 2 and x ≤ 6?**

A $2 \leq x < 6$

B $2 < x < 6$

C $x > 2$

D $2 < x \leq 6$

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18 **Write $x^2 + 8x + 19$ in the form $(x + p)^2 + q$**

- **A** $(x + 4)^2 - 3$
- **B** $(x - 4)^2 + 3$
- **C** $(x + 4)^2 + 3$
- **D** $(x + 4)^2 + 19$

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19 **Solve the simultaneous equations $x + y = 5$, $x - y = -3$**

- **A** $x = 4, y = 1$
- **B** $x = 2, y = 4$
- **C** $x = 1, y = 4$
- **D** $x = 1, y = 5$

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20 **The formula v = u + at gives v = 23 when u = 3, a = 4 and t = 5. Rearrange the formula to make t the subject.**

- **A** t = v + u/a
- **B** t = (v - u) × a
- **C** t = v - u/a
- **D** t = v - u - a

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21 **Solve 7x + 9 = 58**

- **A** x = 7
- **B** x = 8
- **C** x = 6
- **D** x = 9

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22 **Solve 5x + 7 = 2x + 22**

A x = 5

B x = 6

C x = 4

D x = 8

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23 **Solve 3x + 5 = 14**

A x = 2

B x = 6

C x = 3

D x = 4

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24 **A number multiplied by 3, plus 6, is 30. What is the number?**

- A 7
- B 10
- C 9
- D 8

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25 **Solve the inequality 5x + 3 < 38**

- A $x \leq 7$
- B $x < 7$
- C $x < 8$
- D $x > 7$

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ANSWER KEY

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

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