ENGLAND GCSE MATHS OCR 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 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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2 **A guitar costs x pounds. Two guitars and a £15 case cost £95. The value of x is**

- A £35
- B £45
- C £40
- D £80

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3 **A tennis ball costs x pounds. A tube of 4 tennis balls costs £12. The value of x is**

- A £2
- B £12
- C £4
- D £3

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4 **Two hardcover books and one calculator cost £10. One hardcover book and two calculators cost £8. The cost of one calculator is**

- A £4
- B £2
- C £1
- D £3

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5 **A bicycle costs x pounds. After a £25 discount it costs £80. The value of x is**

- A £115
- B £105
- C £55
- D £80

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6 **A cup of coffee costs x pounds. 3 cups of coffee cost £15. The value of x is**

- A £5
- B £4
- C £15
- D £6

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7 **Solve the inequality 3x + 4 < 25**

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

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

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

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9 **Solve $6(x + 5) = 42$**

- **A** x = 1
- **B** x = 2
- **C** x = 4
- **D** x = 7

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10 **The formula v = u + at gives v = 32 when u = 8, a = 4 and t = 6. 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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11 **Use the quadratic formula to solve $x^2 - 7x + 12 = 0$. Give the larger solution.**

- **A** x = 5
- **B** x = 4
- **C** x = 6
- **D** x = 3

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12 **Write $x^2 + 8x + 17$ in the form $(x + p)^2 + q$**

- A $(x + 4)^2 + 1$
- B $(x + 4)^2 - 1$
- C $(x + 4)^2 + 17$
- D $(x - 4)^2 + 1$

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

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

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14 **Solve the inequality $x^2 < 25$**

- **A** $x < 5$
- **B** $x < -5$ or $x > 5$
- **C** $-5 < x < 5$
- **D** $-5 < x$

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15 **Solve the simultaneous equations $x + y = 10$, $x - y = -6$**

- **A** $x = 3, y = 8$
- **B** $x = 2, y = 9$
- **C** $x = 8, y = 2$
- **D** $x = 2, y = 8$

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16 **A number multiplied by 3, plus 5, is 26. What is the number?**

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

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17 **Solve 7x - 4 = 17**

- A x = 3
- B x = 6
- C x = 2
- D x = 4

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18 **Solve 2x + 7 = 21**

- A x = 10
- B x = 7
- C x = 6
- D x = 8

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19 **Which inequality is shown by the integers x that satisfy x > 5 and x ≤ 9?**

- A $5 < x \leq 9$
- B $5 \leq x < 9$
- C $5 < x < 9$
- D $x > 5$

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20 **Solve 3x + 7 = 2x + 14**

- A x = 6
- B x = 7
- C x = 4
- D x = 8

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21 **Solve the inequality 6x + 5 < 59**

- A x < 10
- B x < 9
- C x ≤ 9
- D x > 9

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22 **Solve 4(x + 1) = 24**

- **A** x = 7
- **B** x = 5
- **C** x = 4
- **D** x = 6

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23 **The formula v = u + at gives v = 23 when u = 3, a = 5 and t = 4. 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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24 **Solve $x^2 + 6x + 5 = 0$**

- **A** $x = -1$ or $x = -5$
- **B** $x = 1$ or $x = 6$
- **C** $x = 1$ or $x = 5$
- **D** $x = 1$

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25 **Use the quadratic formula to solve $x^2 - 7x + 10 = 0$. Give the larger solution.**

- **A** $x = 4$
- **B** $x = 2$
- **C** $x = 6$
- **D** $x = 5$

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ANSWER KEY

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

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