ENGLAND GCSE MATHS AQA HIGHER · UNIT 3 · 25 QUESTIONS

Algebra, Notation, Vocabulary and Manipulation — 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 s pounds. The cost, in pounds, of 3 sandwiches and a £1 drink is**

- A 3s + 1
- B 3(s + 1)
- C 4s + 1
- D 3s - 1

Understand It with Pulse | Flag a mistake

2 **A tennis ball costs a pounds. The total cost, in pounds, of 5 tennis balls is**

- A $a + 5$
- B a^5
- C $5a^2$
- D $5a$

Understand It with Pulse | Flag a mistake

3 **The height of a rocket, in metres, after t seconds is $h = 20t - 5t^2$. When $t = 1$, the height is**

- A 25
- B 10
- C 20
- D 15

Understand It with Pulse | Flag a mistake

4 **A hardcover book costs b pounds. The cost, in pounds, of 5 hardcover books is**

A b^5

B $b + 5$

C $5b^2$

D $5b$

Understand It with Pulse | Flag a mistake

5 **Simplify 2a + 4b + 2a - b, where a is the number of red apples and b is the number of lemons.**

A $4a + 3b$

B $3b$

C $4a$

D $4a + 5b$

Understand It with Pulse | Flag a mistake

6 **Simplify 4p + 5b + 4p - b, where p is the number of paintbrushes and b is the number of hardcover books.**

- A 8p + 6b
- B 4b
- C 8p
- D 8p + 4b

Understand It with Pulse | Flag a mistake

7 **Simplify $\frac{6x^2}{2x}$**

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

Understand It with Pulse | Flag a mistake

8 $(x^4)^2$ is equal to

- A x^8
- B x^9
- C x^{16}
- D x^6

Understand It with Pulse | Flag a mistake

9 If $x = 5$, the value of $3x^2 - 1$ is

- A 74
- B 14
- C 104
- D 76

Understand It with Pulse | Flag a mistake

10 **Simplify $x^2 - 9/x + 3$**

- A $x + 3$
- B $x^2 - 3$
- C $x - 3$
- D $x - 4$

Understand It with Pulse | Flag a mistake

11 **Expand $(x + 2)(x - 3)$**

- A $x^2 - x - 6$
- B $x^2 + x - 6$
- C $x^2 + 5x - 6$
- D $x^2 - x + 6$

Understand It with Pulse | Flag a mistake

12 **Which statement is true for any whole number n?**

- A $n^2 + n$ is always even
- B $n^2 + n$ is always an odd number
- C n^2 is always even
- D $n + 1$ is always odd

Understand It with Pulse | Flag a mistake

13 **The inverse of f(x) = x/4 + 3 is**

- A $f^{-1}(x) = 4x + 3$
- B $f^{-1}(x) = 4(x + 3)$
- C $f^{-1}(x) = x - 3/4$
- D $f^{-1}(x) = 4(x - 3)$

Understand It with Pulse | Flag a mistake

14 **Write an expression for 8 more than 3 times a number x**

A 8x + 3

B 3x × 8

C 3x - 8

D 3x + 8

Understand It with Pulse | Flag a mistake

15 **Factorise $30x^2 - 180x$**

A 30x(x - 6)

B $5(x^2 - 6x)$

C 30x(x + 6)

D x(30x - 6)

Understand It with Pulse | Flag a mistake

16 **Given $f(x) = 3x + 3$ and $g(x) = x^2$, the value of $(g \circ f)(2)$ is**

A 81

B 9

C 82

D 39

Understand It with Pulse | Flag a mistake

17 **Expand $(x + 2)^2$**

A $x^2 + 4x + 4$

B $x^2 + 2x + 4$

C $x^2 + 4$

D $x^2 + 4x - 4$

Understand It with Pulse | Flag a mistake

18 **Expand 6(x + 6)**

A 6x + 36

B 12x + 36

C 6x + 6

D 6x + 12

Understand It with Pulse | Flag a mistake

19 **Simplify 3a + 2b - a + 4b**

A 4a + 6b

B 2b + 6a

C 2a - 2b

D 2a + 6b

Understand It with Pulse | Flag a mistake

20 **Factorise $x^2 - 9x + 18$**

- A $(x + 3)(x + 6)$
- B $(x + 3)(x - 6)$
- C $(x - 3)(x + 6)$
- D $(x - 3)(x - 6)$

Understand It with Pulse | Flag a mistake

21 **Simplify $\frac{6x}{6}$**

- A $2x$
- B $\frac{x}{2}$
- C x
- D x^2

Understand It with Pulse | Flag a mistake

22 $(x^3)^3$ is equal to

A x^9

B x^{27}

C x^{10}

D x^6

Understand It with Pulse | Flag a mistake

23 If $x = 6$, the value of $2x^2 - 1$ is

A 95

B 73

C 11

D 71

Understand It with Pulse | Flag a mistake

24 **Expand (x + 4)(x + 5)**

- A $x^2 + 9x - 20$
- B $x^2 - 9x + 20$
- C $x^2 + 9x + 20$
- D $x^2 - x + 20$

Understand It with Pulse | Flag a mistake

25 **The inverse of f(x) = 4x + 4 is**

- A $f^{-1}(x) = 4x - 4$
- B $f^{-1}(x) = x/4 + 4$
- C $f^{-1}(x) = x - 4/4$
- D $f^{-1}(x) = x + 4/4$

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

© 2026 Brett Robbins. All Rights Reserved.