ENGLAND GCSE MATHS EDEXCEL 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 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

2 **Write in its simplest form 4a + 3b + 3a - b, where a is the number of red apples and b is the number of lemons.**

- A 2b
- B 7a
- C 7a + 2b
- D 7a + 4b

Understand It with Pulse | Flag a mistake

3 **A tennis ball costs a pounds. The total cost, in pounds, of 4 tennis balls is**

- A $4a^2$
- B 4a
- C a + 4
- D a^4

Understand It with Pulse | Flag a mistake

4 **Write in its simplest form 3p + 5b + 2p - b, where p is the number of paintbrushes and b is the number of hardcover books.**

- A 5p + 4b
- B 4b
- C 5p
- D 5p + 6b

Understand It with Pulse | Flag a mistake

5 **The height of a rocket, in metres, after t seconds is $h = 15t - 5t^2$. When t = 2, the height is**

- A 15
- B 5
- C 10
- D 30

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6 **A sandwich costs s pounds. The cost, in pounds, of 5 sandwiches and a £2 drink is**

- A 6s + 2
- B 5s + 2
- C 5s - 2
- D 5(s + 2)

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7 **Multiply out 3x(3x - 1)**

- A $9x^2 - x$
- B $9x^2 - 3x$
- C $9x^2 + 3x$
- D $6x^2 - 3x$

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

9 **Given f(x) = x + 4 and g(x) = 4x, the value of (g ° f)(3) is**

- **A** 16
- **B** 28
- **C** 19
- **D** 8

Understand It with Pulse | Flag a mistake

10 **Write in its simplest form 2a + 2b - a + 3b**

- A a + 5b
- B a - b
- C b + 5a
- D 3a + 5b

Understand It with Pulse | Flag a mistake

11 **Write in its simplest form $x^2 - 4/x + 2$**

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

Understand It with Pulse | Flag a mistake

12 **Factorise $x^2 + 8x + 15$**

- A $(x - 5)(x - 3)$
- B $(x - 5)(x + 3)$
- C $(x + 5)(x + 3)$
- D $(x + 5)(x - 3)$

Understand It with Pulse | Flag a mistake

13 **Multiply out $(x + 2)^2$**

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

Understand It with Pulse | Flag a mistake

14 $x^5 \times x^4$ is equal to

A x^9

B x^{10}

C x^{20}

D x^1

Understand It with Pulse | Flag a mistake

15 Multiply out $(x + 1)(x + 2)$

A $x^2 + 3x + 2$

B $x^2 - 3x + 2$

C $x^2 - x + 2$

D $x^2 + 3x - 2$

Understand It with Pulse | Flag a mistake

16 **Write an expression for 6 less than 3 times a number x**

A 6 - 3x

B 3x + 6

C 6x - 3

D 3x - 6

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17 **If x = 5, the value of $2x^2 - 5$ is**

A 45

B 65

C 5

D 55

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18 **The sum of two odd numbers is always**

A prime

B a square number

C odd

D even

Understand It with Pulse | Flag a mistake

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

A $30x(x - 6)$

B $x(30x - 6)$

C $30x(x + 6)$

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

Understand It with Pulse | Flag a mistake

20 **Write in its simplest form $\frac{8x}{8}$**

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

Understand It with Pulse | Flag a mistake

21 **Multiply out 3x(3x - 4)**

- A $9x^2 - 12x$
- B $9x^2 - 4x$
- C $6x^2 - 12x$
- D $9x^2 + 12x$

Understand It with Pulse | Flag a mistake

22 The inverse of f(x) = x/5 + 1 is

- A $f^{-1}(x) = 5(x - 1)$
- B $f^{-1}(x) = x - 1/5$
- C $f^{-1}(x) = 5x + 1$
- D $f^{-1}(x) = 5(x + 1)$

Understand It with Pulse | Flag a mistake

23 Given f(x) = x + 3 and g(x) = 3x, the value of (g ° f)(5) is

- A 12
- B 24
- C 18
- D 14

Understand It with Pulse | Flag a mistake

24 **Write in its simplest form 2a + 2b - 3a + b**

A -a + b

B -a + 3b

C -b + 3a

D 5a + 3b

Understand It with Pulse | Flag a mistake

25 **Write in its simplest form x^2 - 36/x + 6**

A x - 6

B x^2 - 6

C x + 6

D x - 7

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

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