

GAC Mathematics

Name: _____ Score: _____

1. Why is 1 not a prime number?

- ☐ It is not an integer
- ☐ It is irrational
- ☐ It is too small
- ☐ It has only one factor, and a prime has exactly two

2. In the expression $5x^2 - 3x + 7$, what is 5 called?

- ☐ The coefficient of x^2
- ☐ The variable
- ☐ The constant
- ☐ The index

3. Find the gradient of the line through (2, 1) and (6, 9).

4. What do the interior angles of a hexagon add up to, in degrees?

5. You know the adjacent side and want the opposite side. Which ratio do you use?

- ☐ Tangent
- ☐ Cosine
- ☐ The cosine rule
- ☐ Sine

6. What is $\log_{10} 1000$?

7. Evaluate $5 + 3 \times 2^2 - 4$.

8. $(x + 1)^2 = x^2 + 2x + 1$ is an identity, not an equation to solve.

- ☐ True ☐ False

9. That line is $y = 2x + c$. Find c .

10. Every length of a solid is doubled. What happens to its volume?

- ☐ It doubles
- ☐ It multiplies by 8
- ☐ It stays the same
- ☐ It multiplies by 4

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1. It has only one factor, and a prime has exactly two

A prime is a positive integer greater than 1 with exactly two positive factors. The number 1 has only one positive factor.

2. The coefficient of x^2

A coefficient multiplies a term with a letter in it. The constant here is 7, which has no letter.

3. 2

Rise over run: $(9 - 1) \div (6 - 2) = 8 \div 4 = 2$.

4. 720

$(n - 2) \times 180^\circ$ with $n = 6$ gives $4 \times 180^\circ = 720^\circ$.

5. Tangent

Tangent is opposite over adjacent – the only ratio that involves neither hypotenuse.

6. 3

It asks what power of 10 gives 1000, and $10^3 = 1000$.

7. 13

Indices first ($2^2 = 4$), then multiplication ($3 \times 4 = 12$), then left to right: $5 + 12 - 4 = 13$.

8. True

It is true for every value of x , so there is nothing to solve – it is a fact about the algebra.

9. -3

Substitute (2, 1): $1 = 4 + c$, so $c = -3$. Check with (6, 9): $2(6) - 3 = 9 \checkmark$.

10. It multiplies by 8

Volume scales with the cube of the length ratio: $2^3 = 8$. Area scales with the square, 4.