

Advanced High School Basic Mathematics

Basic Math · Answer Key · 10 Questions

1. What is the value of the discriminant of the quadratic equation $3x^2 - 5x + 2 = 0$?

- A) 1
- B) -1
- C) 25
- D) 13

2. In a standard deck of 52 playing cards, what is the probability of drawing a face card (King, Queen, or Jack) on the first draw?

- A) $\frac{3}{13}$
- B) $\frac{1}{4}$
- C) $\frac{1}{13}$
- D) $\frac{1}{2}$

3. What is the sum of the interior angles of a regular octagon?

- A) 1080°
- B) 1440°
- C) 720°
- D) 900°

4. If a number is divisible by both 3 and 5, what is the smallest positive integer it must also be divisible by?

- A) 15
- B) 8
- C) 30
- D) 45

5. What is the formula for the n th term of an arithmetic sequence?

- A) $a_n = a_1 + (n-1)d$
- B) $a_n = a_1 * r^{(n-1)}$
- C) $a_n = a_1 + nd$
- D) $a_n = a_1 * (1-r)^n$

6. What is the circumference of a circle with a radius of 7 units, using $\pi \approx \frac{22}{7}$?

- A) 44 units
- B) 154 units
- C) 22 units
- D) 49 units

7. What is the prime factorization of 72?

- A) $2^3 * 3^2$
- B) $2^2 * 3^3$
- C) $2 * 3 * 4 * 6$
- D) $8 * 9$

8. What is the median of the dataset: {4, 7, 2, 9, 5}?

- A) 5
- B) 4
- C) 7
- D) 9

9. What is the value of $\cos(90^\circ)$ in radians?

- A) 0
- B) 1
- C) $\pi/2$
- D) undefined

10. If two lines are perpendicular and the slope of one line is $-1/2$, what is the slope of the other line?

- A) 2
- B) $1/2$
- C) -2
- D) $-1/4$