

# Pre-Calculus Essentials

Mathematics · Answer Key · 8 Questions

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1. What is the period of the parent function  $f(x) = \sin(x)$ ?

- A)  $\pi$
- B)  $2\pi$**
- C)  $\pi/2$
- D)  $4\pi$

2. Which of the following functions represents an even function, where  $f(-x) = f(x)$ ?

- A)  $f(x) = x^3$
- B)  $f(x) = \sin(x)$
- C)  $f(x) = x^2$**
- D)  $f(x) = 1/x$

3. In the unit circle, what are the coordinates  $(x, y)$  that correspond to an angle of 180 degrees?

- A) (0, 1)
- B) (1, 0)
- C) (0, -1)
- D) (-1, 0)**

4. What is the sum of the first 10 terms of the arithmetic sequence 2, 4, 6, 8, ...?

- A) 110**
- B) 100
- C) 90
- D) 120

5. Which value of  $x$  satisfies the logarithmic equation  $\log_2(x) = 3$ ?

- A) 6
- B) 8**
- C) 9
- D) 32

6. For any angle  $\theta$ , what is the value of the identity  $\sin^2(\theta) + \cos^2(\theta)$ ?

- A) 0
- B) 1**
- C) 2
- D)  $\tan(\theta)$

7. What is the vertical asymptote of the function  $f(x) = 1/(x - 3)$ ?

A)  $x = 0$

B)  $x = 1$

**C)  $x = 3$**

D)  $y = 3$

8. What is the value of  $\log_b(b)$  for any positive base  $b$  not equal to 1?

A) 0

**B) 1**

C)  $b$

D) undefined