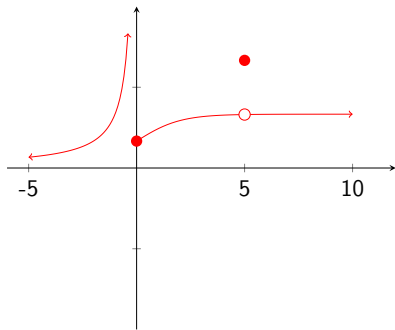1. Which of the following accurately describes the function f whose graph is depicted to the right?

(A) f is right continuous at 0.

(B) f is left continuous at 0.

(C) f is right continuous at 5.

(D) f is left continuous at 5.

2. True or False?

The function
$$f(x) = \begin{cases} x^2 + 1 & \text{if } x \geq 0 \\ -x^2 & \text{if } x < 0 \end{cases}$$

is right continuous at 0.

3.   True or False?

$$\lim_{x \to 5} \frac{x^2 + 3x + 2}{x + 2} \text{ exists.}$$

4. True or False?

$\lim_{x \to 0} \dfrac{4^{2x} - 1}{4^x - 1}$ exists.

5. For how many values of c does the following limit exist?

$$\lim_{x \to c} \frac{x^2 - 5x - 6}{x - c}$$

(A) None.

(B) 1.

(C) 2.

(D) More than 2.

6. True or False?

There exists a function f that is not continuous at $x = 1$, but $\lim_{x \to 1^-} f(x)$ and $\lim_{x \to 1^+} f(x)$ both exist and are equal.

7. True or False?

The function f given by

$$f(x) = \ln(9 - x^2)$$

is continuous on its domain.

8.   True or False?

The equation $e^x + \ln x = 0$ has a solution.