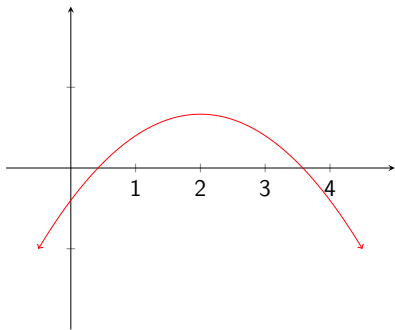
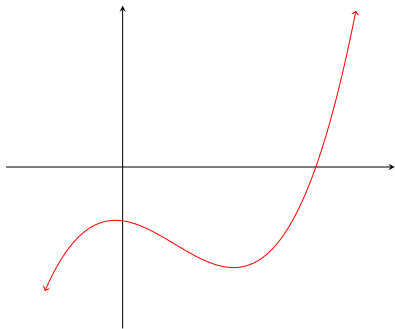


1. The graph of the function f is depicted to the right. For which value of a is $f'(a) = 0$?



- (A) 0
- (B) 1
- (C) 2
- (D) None of the above.

2. The graph of the function f is depicted to the right. For how many values of a is $f'(a) = 0$?



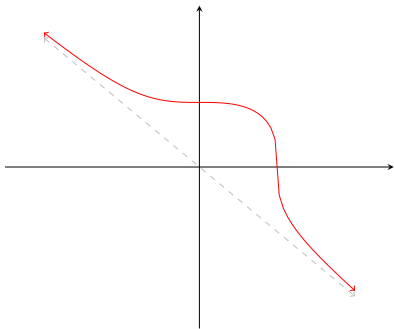
(A) 0

(B) 1

(C) 2

(D) None of the above.

3. The graph of the function f is depicted to the right in red, and the line $y = -x$ is depicted in gray. What is $\lim_{x \rightarrow \infty} f'(x)$?



- (A) 0
- (B) 1
- (C) 2
- (D) None of the above.

4. What is the slope of the tangent line to the graph of the function $f(x) = 2x + 7$ at $a = 0$?

(A) 0

(B) 1

(C) 2

(D) None of the above.

5. What is the slope of the tangent line to the graph of the function $f(x) = x^3 + x$ at $a = 0$?

(A) 0

(B) 1

(C) 2

(D) None of the above.

6. What is the slope of the tangent line to the graph of the function $f(x) = \frac{1}{x^2 + 1}$ at $a = 0$?

(A) 0

(B) 1

(C) 2

(D) None of the above.

7. For which function f and which value a is the following limit equal to $f'(a)$?

$$\lim_{h \rightarrow 0} \frac{5^{2+h} - 25}{h}$$

- (A) $f(x) = 5^x$ and $a = 25$
- (B) $f(x) = 5^{2x}$ and $a = 1$
- (C) $f(x) = 5^x$ and $a = 2$
- (D) None of the above.

8. True or False?

Let $f(x) = x^2$. The slope of the tangent line at $x = 2$ is smaller than the slope of the secant line passing through $(2, f(2))$ and $(3, f(3))$.

9. True or False?

If f is the function whose graph is depicted in red below, then $f'(1)$ is smaller than the secant line passing through $(1, f(1))$ and $(1 + h, f(1 + h))$ for any $h > 0$.

