1. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 1^-} \frac{1}{(x+1)^9} + 4$$

A. $-\infty$

B. ∞

C. $f(1)$

D. The limit does not exist

E. None of the above

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2. To estimate the one-sided limit of the function below as x approaches 5 from the right, which of the following sets of numbers should you use?

$$\frac{\frac{5}{x} - 1}{x - 5}$$

A. $\{4.9000, 4.9900, 4.9990, 4.9999\}$

B. $\{4.9000, 4.9900, 5.0100, 5.1000\}$

C. $\{5.0000, 4.9000, 4.9900, 4.9990\}$

D. $\{5.1000, 5.0100, 5.0010, 5.0001\}$

E. $\{5.0000, 5.1000, 5.0100, 5.0010\}$

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3. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 5^-} \frac{9}{(x+5)^9} + 7$$

A. $f(5)$

B. $-\infty$

C. ∞

D. The limit does not exist

E. None of the above

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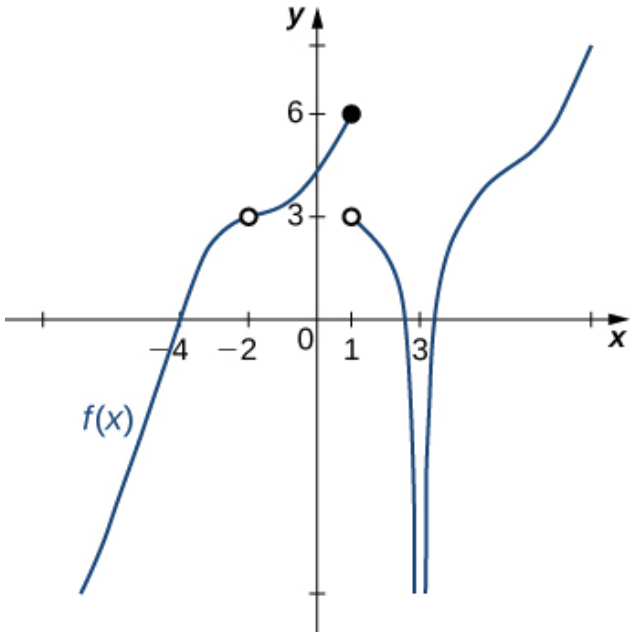
4. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = 0$.



A. 0

B. -4

C. 3

D. Multiple a make the statement true.

E. No a make the statement true.

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5. Evaluate the limit below, if possible.

$$\lim_{x \to 5} \frac{\sqrt{7x - 10} - 5}{8x - 40}$$

A. 0.100

B. 0.331

C. 0.012

D. ∞

E. None of the above

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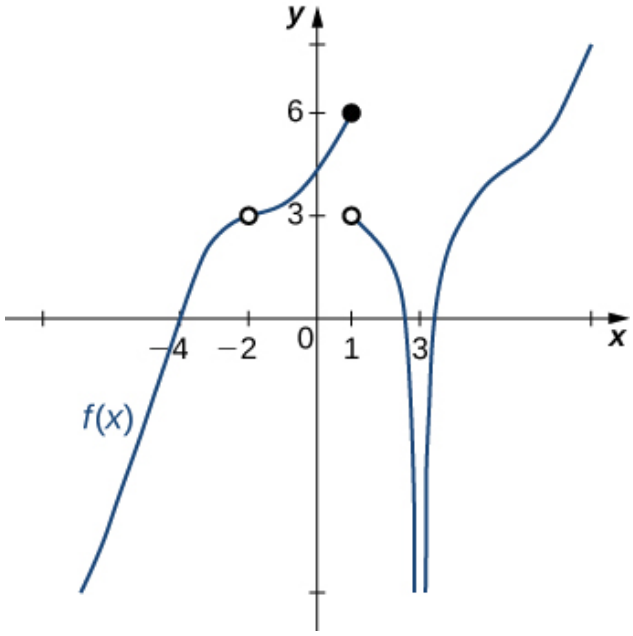
6. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = 0$.



A. -4

B. 3

C. 0

D. Multiple a make the statement true.

E. No a make the statement true.

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7. Based on the information below, which of the following statements is always true?

$$f(x) \text{ approaches } 10.094 \text{ as } x \text{ approaches } \infty.$$

A. $f(x)$ is close to or exactly 10.094 when x is large enough.

B. x is undefined when $f(x)$ is large enough.

C. $f(x)$ is undefined when x is large enough.

D. $f(x)$ is close to or exactly ∞ when x is large enough.

E. None of the above are always true.

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8. Evaluate the limit below, if possible.

$$\lim_{x \to 8} \frac{\sqrt{7x - 20} - 6}{8x - 64}$$

A. 0.010

B. 0.083

C. 0.331

D. ∞

E. None of the above

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9. Based on the information below, which of the following statements is always true?

As x approaches 9, $f(x)$ approaches ∞.

A. $f(x)$ is close to or exactly 9 when x is large enough.

B. $f(x)$ is close to or exactly ∞ when x is large enough.

C. $f(x)$ is undefined when x is close to or exactly 9.

D. x is undefined when $f(x)$ is close to or exactly ∞.

E. None of the above are always true.

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10. To estimate the one-sided limit of the function below as x approaches 8 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{8}{x} - 1}{x - 8}$$

A. $\{8.0000, 8.1000, 8.0100, 8.0010\}$

B. $\{8.1000, 8.0100, 8.0010, 8.0001\}$

C. $\{7.9000, 7.9900, 7.9990, 7.9999\}$

D. $\{8.0000, 7.9000, 7.9900, 7.9990\}$

E. $\{7.9000, 7.9900, 8.0100, 8.1000\}$
