1. To estimate the one-sided limit of the function below as x approaches 4 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{4}{x} - 1}{x - 4}$$

  A. $\{3.9000, 3.9900, 3.9990, 3.9999\}$

  B. $\{4.0000, 4.1000, 4.0100, 4.0010\}$

  C. $\{4.1000, 4.0100, 4.0010, 4.0001\}$

  D. $\{4.0000, 3.9000, 3.9900, 3.9990\}$

  E. $\{3.9000, 3.9900, 4.0100, 4.1000\}$

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

$$\lim_{x \to 6^+} \frac{6}{(x - 6)^6} + 5$$

  A. ∞

  B. $f(6)$

  C. $-\infty$

  D. The limit does not exist

  E. None of the above

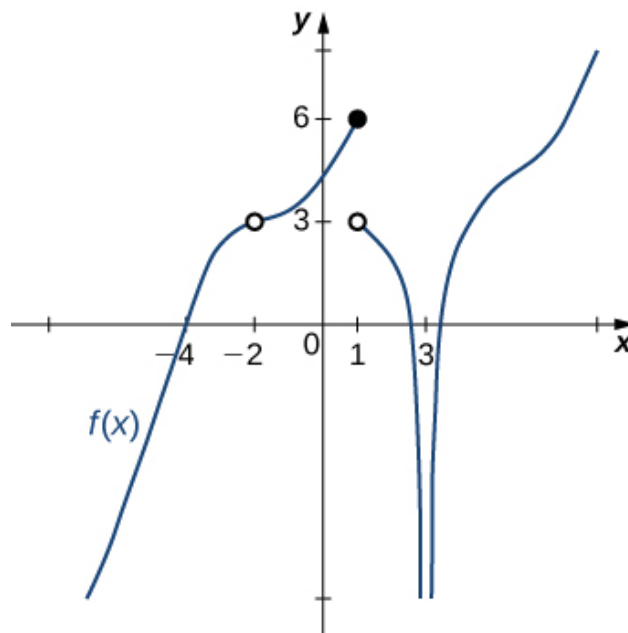
3. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to -5^-} \frac{6}{(x - 5)^9} + 4$$

  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:
$\lim_{x \to a} f(x) = -\infty$.

A. -2

B. $-\infty$

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.

$$\lim_{x \to 9} \frac{\sqrt{5x - 20} - 5}{9x - 81}$$

A. 0.011

B. 0.100

C. ∞

   D. 0.248

   E. None of the above

6. Evaluate the limit below, if possible.

$$\lim_{x \to 6} \frac{\sqrt{8x - 23} - 5}{3x - 18}$$

   A. 0.943

   B. 0.267

   C. 0.100

   D. ∞

   E. None of the above

7. 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. $\{8.1000, 8.0100, 8.0010, 8.0001\}$

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

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

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

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

8. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = 0$.
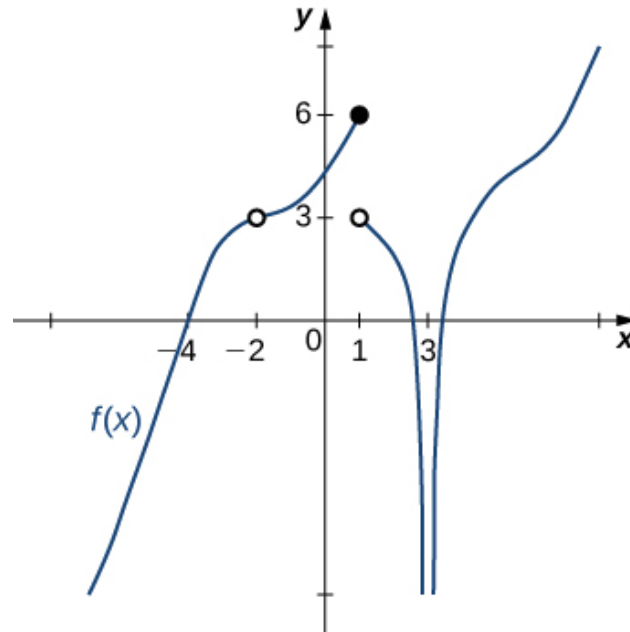
A. 3

B. 0

C. −4

D. Multiple a make the statement true.

E. No a make the statement true.

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

$$f(x) \ approaches \ 17.121 \ as \ x \ approaches \ 7.$$

A. $f(17) = 7$

B. $f(7) = 17$

C. $f(7)$ is close to or exactly 17

D. $f(17)$ is close to or exactly 7

E. None of the above are always true.

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

$$f(x) \text{ approaches } 3.475 \text{ as } x \text{ approaches } 9.$$

A. $f(x)$ is close to or exactly 3.475 when x is close to 9

B. $f(x) = 3.475$ when x is close to 9

C. $f(x)$ is close to or exactly 9 when x is close to 3.475

D. $f(x) = 9$ when x is close to 3.475

E. None of the above are always true.