

1. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 9} \frac{\sqrt{5x - 20} - 5}{3x - 27}$$

- A. 0.167
 - B. ∞
 - C. 0.745
 - D. 0.100
 - E. None of the above
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2. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow -7^-} \frac{-8}{(x - 7)^3} + 3$$

- A. $f(-7)$
 - B. $-\infty$
 - C. ∞
 - D. The limit does not exist
 - E. None of the above
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3. Based on the information below, which of the following statements is always true?

$f(x)$ approaches ∞ as x approaches 5.

- A. x is undefined when $f(x)$ is close to or exactly ∞ .
- 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 5.
- D. $f(x)$ is close to or exactly 5 when x is large enough.
- E. None of the above are always true.

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

As x approaches 4, $f(x)$ approaches ∞ .

- A. $f(x)$ is undefined when x is close to or exactly 4.
 - B. $f(x)$ is close to or exactly 4 when x is large enough.
 - C. $f(x)$ is close to or exactly ∞ when x is large enough.
 - D. x is undefined when $f(x)$ is close to or exactly ∞ .
 - E. None of the above are always true.
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5. To estimate the one-sided limit of the function below as x approaches 4 from the right, which of the following sets of numbers should you use?

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

- A. $\{4.0000, 3.9000, 3.9900, 3.9990\}$
 - B. $\{4.1000, 4.0100, 4.0010, 4.0001\}$
 - C. $\{3.9000, 3.9900, 4.0100, 4.1000\}$
 - D. $\{3.9000, 3.9900, 3.9990, 3.9999\}$
 - E. $\{4.0000, 4.1000, 4.0100, 4.0010\}$
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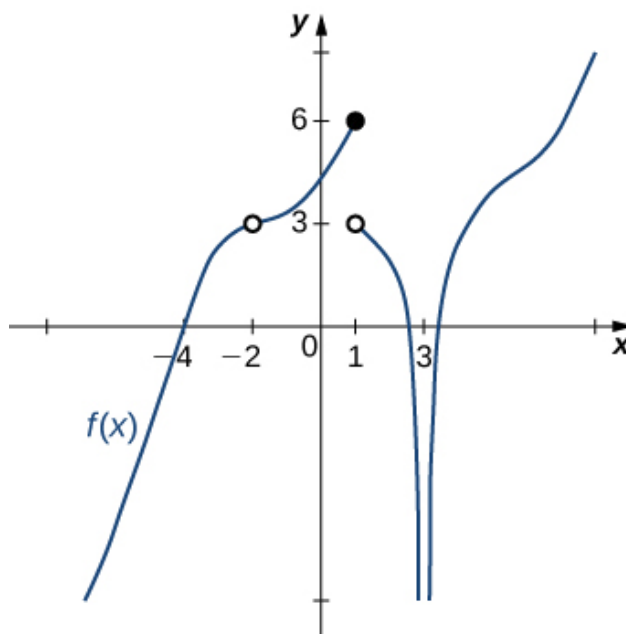
6. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 7} \frac{\sqrt{7x - 24} - 5}{5x - 35}$$

- A. ∞
- B. 0.100
- C. 0.020
- D. 0.529

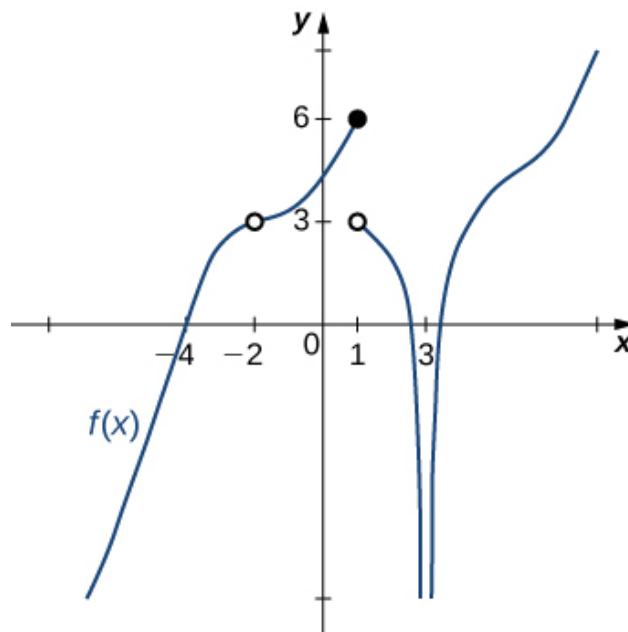
E. None of the above

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



- A. -4
- B. 3
- C. 0
- D. Multiple a make the statement true.
- E. No a make the statement true.
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8. For the graph below, evaluate the limit: $\lim_{x \rightarrow 1} f(x)$.



- A. 3
- B. 6
- C. $-\infty$
- D. The limit does not exist
- E. None of the above

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

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

- A. $\{5.1000, 5.0100, 5.0010, 5.0001\}$
- B. $\{4.9000, 4.9900, 4.9990, 4.9999\}$
- C. $\{5.0000, 4.9000, 4.9900, 4.9990\}$
- D. $\{4.9000, 4.9900, 5.0100, 5.1000\}$
- E. $\{5.0000, 5.1000, 5.0100, 5.0010\}$

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

$$\lim_{x \rightarrow 3^+} \frac{6}{(x-3)^6} + 5$$

- A. $f(3)$
 - B. ∞
 - C. $-\infty$
 - D. The limit does not exist
 - E. None of the above
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