1. 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. $\{4.1000, 4.0100, 4.0010, 4.0001\}$

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

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

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

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

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

   As x approaches 2, $f(x)$ approaches ∞.

   A. $f(x)$ is close to or exactly 2 when x is large enough.

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

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

   D. $f(x)$ is undefined when x is close to or exactly 2.

   E. None of the above are always true.

3. To estimate the one-sided limit of the function below as x approaches 7 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{7}{x} - 1}{x - 7}$$

   A. $\{7.0000, 6.9000, 6.9900, 6.9990\}$

   B. $\{7.0000, 7.1000, 7.0100, 7.0010\}$

   C. $\{7.1000, 7.0100, 7.0010, 7.0001\}$

   D. $\{6.9000, 6.9900, 6.9990, 6.9999\}$

E. $\{6.9000, 6.9900, 7.0100, 7.1000\}$

4. Evaluate the limit below, if possible.

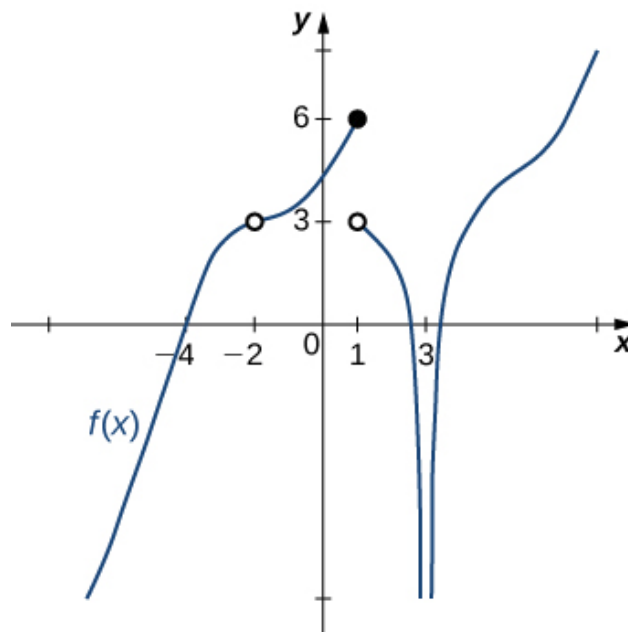$$\lim_{x \to 3} \frac{\sqrt{7x - 5} - 4}{5x - 15}$$

A. 0.529

B. 0.125

C. 0.025

D. ∞

E. None of the above

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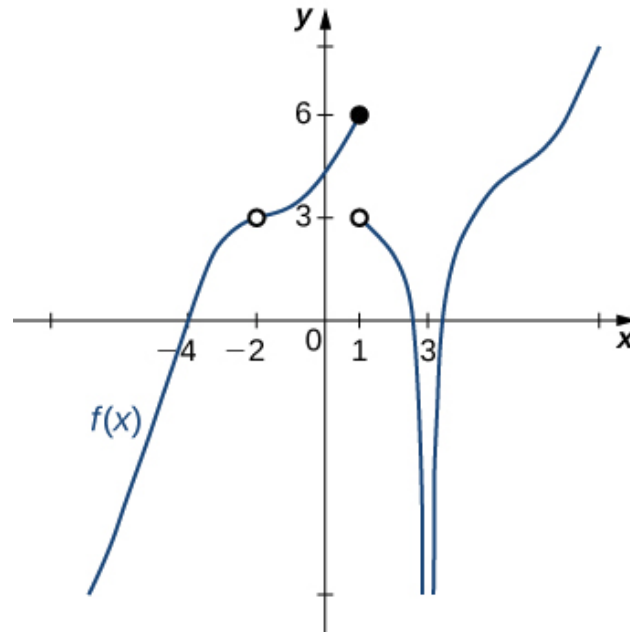

A. 3

B. 0

C. -4

   D. Multiple a make the statement true.

   E. No a make the statement true.

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

   A. -2

   B. $-\infty$

   C. 3

   D. Multiple a make the statement true.

   E. No a make the statement true.

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

   $f(x)$ *approaches* ∞ *as* x *approaches* 4.

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

   B. $f(x)$ is undefined when x is close to or exactly 4.

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

D. $f(x)$ is close to or exactly 4 when x is large enough.

E. None of the above are always true.

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8. Evaluate the limit below, if possible.

$$\lim_{x \to 9} \frac{\sqrt{9x - 56} - 5}{5x - 45}$$

A. 0.100

B. 0.600

C. ∞

D. 0.020

E. None of the above

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

$$\lim_{x \to -1^+} \frac{-2}{(x + 1)^8} + 7$$

A. $-\infty$

B. ∞

C. $f(-1)$

D. The limit does not exist

E. None of the above

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

$$\lim_{x \to -5^+} \frac{-9}{(x - 5)^7} + 2$$

A. ∞

B. $-\infty$

C. $f(-5)$

D. The limit does not exist

E. None of the above