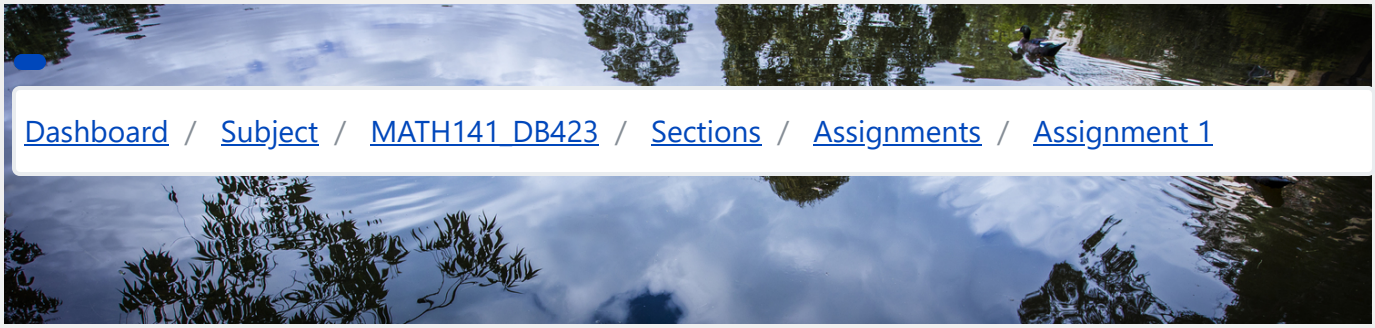

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State	Finished
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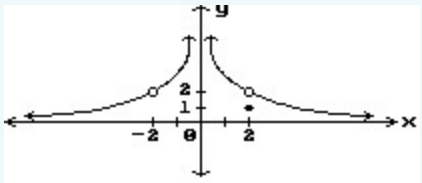
Time taken	
Marks	28.00/31.00
Grade	

Question **1**

Correct

Mark 1.00 out of 1.00

Find all points where the function is discontinuous.



Select one:

- A. x = 2
- B. x = -2, x = 0, x = 2 ✔
- C. x = 0, x = 2
- D. x = -2, x = 0

The correct answer is: x = -2, x = 0, x = 2

Question **2**

Correct

Mark 1.00 out of 1.00

Find the limit.

If $\lim_{x \to 0} \frac{f(x)}{x^2} = 1$, find $\lim_{x \to 0} \frac{f(x)}{x}$.

Select one:

- A. 1
- B. 2
- C. 0 ✔
- D. Does not exist

The correct answer is: 0

Question **3**

Correct

Mark 1.00 out of 1.00

Divide numerator and denominator by the highest power of x in the denominator to find the limit.

$$\lim_{t \to \infty} \frac{\sqrt{36t^2 - 216}}{t - 6}$$

Select one:

- A. 6 ✔
- B. 36
- C. 216
- D. does not exist

The correct answer is: 6

Question **4**

Correct

Mark 1.00 out of 1.00

Solve the problem.

To what new value should f(2) be changed to remove the discontinuity?

$$f(x) = \begin{cases} 2x-4, & x<2 \\ 2 & x=2 \\ x-2, & x>2 \end{cases}$$

Select one:

- A. -1
- B. -8
- C. -7
- D. 0 ✔

The correct answer is: 0

Question **5**

Correct

Mark 1.00 out of 1.00

Divide numerator and denominator by the highest power of x in the denominator to find the limit.

$$\lim_{x\to\infty} \frac{4x^{-1}-3x^{-3}}{4x^{-2}+x^{-5}}$$

Select one:

- A. -∞
- B. ∞ ✔
- C. 1
- D. 0

The correct answer is: ∞

Question **6**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to -1^+} (x+3)\left(\frac{|x+1|}{x+1}\right)$$

Select one:

- A. 2 ✔
- B. Does not exist
- C. -2
- D. 4

The correct answer is: 2

Question **7**

Incorrect

Mark 0.00 out of 1.00

Find the limit .

$$\lim_{x \to -7^+} f(x), \text{ where } f(x) = \begin{cases} x & -7 \le x < 0, \text{ or } 0 < x \le 3 \\ 1 & x = 0 \\ 0 & x < -7 \text{ or } x > 3 \end{cases}$$

Select one:

- A. Does not exist
- B. 6
- C. -0 ✖
- D. -7

The correct answer is: -7

Question **8**

Correct

Mark 1.00 out of 1.00

Provide an appropriate response.

Let $\lim_{x \to 9} f(x) = 6$ and $\lim_{x \to 9} g(x) = -9$. Find $\lim_{x \to 9} \left[\frac{-4f(x) - 3g(x)}{2 + g(x)} \right]$.

Select one:

- A. - 15
- B. $-\frac{3}{7}$ ✔
- C. $\frac{51}{7}$
- D. 9

The correct answer is: $-\frac{3}{7}$

Question **9**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to \infty} \frac{x^2 - 8x + 19}{x^3 + 3x^2 + 18}$$

Select one:

- A. ∞
- B. 0 ✔
- C. $\frac{19}{18}$
- D. 1

The correct answer is: 0

Question **10**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to -3^-} \frac{1}{x+3}$$

Select one:

- A. ∞
- B. -∞ ✔
- C. 0
- D. -1

The correct answer is: -∞

Question **11**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to \infty} \frac{\cos 4x}{x}$$

Select one:

- A. 4
- B. 0 ✔
- C. - ∞
- D. 1

The correct answer is: 0

Question **12**

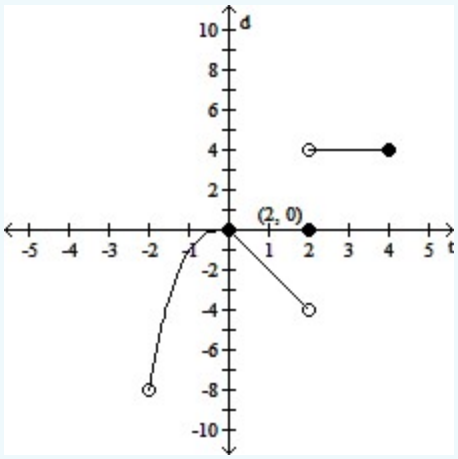
Correct

Mark 1.00 out of 1.00

Answer the question.

Does $\lim_{x \to 2} f(x) = f(2)$?

$$f(x) = \begin{cases} x^3, & -2 < x \leq 0 \\ -2x, & 0 \leq x < 2 \\ 4, & 2 < x \leq 4 \\ 0, & x = 2 \end{cases}$$



Select one:

- A. No
- B. Yes

The correct answer is: No

Question **13**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to -\infty} \frac{4x^3 + 2x^2}{x - 6x^2}$$

Select one:

- A. ∞ ✔
- B. $-\frac{1}{3}$
- C. 4
- D. $-\infty$

The correct answer is: ∞

Question **14**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to 2^-} \frac{\sqrt{5x}(x-2)}{|x-2|}$$

Select one:

- A. 0
- B. Does not exist
- C. $-\sqrt{10}$ ✔
- D. $\sqrt{10}$

The correct answer is: $-\sqrt{10}$

Question **15**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to -2^-} (x+5)\left(\frac{|x+2|}{x+2}\right)$$

Select one:

- A. -3 ✔
- B. 7
- C. Does not exist
- D. 3

The correct answer is: -3

Question **16**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to \infty} \frac{1}{x} - 4$$

Select one:

- A. 4
- B. -5
- C. -4 ✔
- D. -3

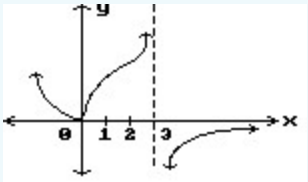
The correct answer is: -4

Question **17**

Correct

Mark 1.00 out of 1.00

Find all points where the function is discontinuous.



Select one:

- A. x = 3 ✔
- B. x = 0, x = 3
- C. x = 0
- D. None

The correct answer is: x = 3

Question **18**

Correct

Mark 1.00 out of 1.00

Find numbers a and b, or k, so that f is continuous at every point.

$$f(x) = \begin{cases} 8x + 3, & \text{if } x < -1 \\ kx + 2, & \text{if } x \geq -1 \end{cases}$$

Select one:

- A. k = 2
- B. k = - 2
- C. k = 9
- D. k = 7 ✔

The correct answer is: k = 7

Question **19**

Correct

Mark 1.00 out of 1.00

Divide numerator and denominator by the highest power of x in the denominator to find the limit.

$$\lim_{x\to\infty}\sqrt{\frac{25x^2}{2+36x^2}}$$

Select one:

- A. $\frac{5}{6}$ ✔
- B. $\frac{25}{36}$
- C. does not exist
- D. $\frac{25}{2}$

The correct answer is: $\frac{5}{6}$

Question **20**

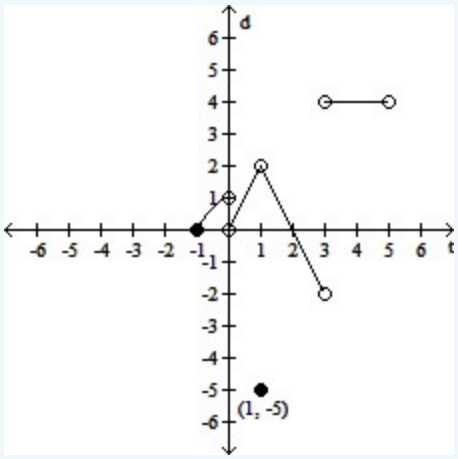
Correct

Mark 1.00 out of 1.00

Answer the question.

Does $\lim_{x \to -1^+} f(x) = f(-1)$?

$$f(x) = \begin{cases} -x^2 + 1, & -1 \le x < 0 \\ 2x, & 0 < x < 1 \\ -5, & x = 1 \\ -2x + 4 & 1 < x < 3 \\ 4, & 3 < x < 5 \end{cases}$$



Select one:

- A. No
- B. Yes ✔

The correct answer is: Yes

Question **21**

Incorrect

Mark 0.00 out of 1.00

Find the limit.

$$\lim_{x \to 1^-} f(x), \text{ where } f(x) = \begin{cases} \sqrt{1-x^2} & 0 \le x < 1 \\ 1 & 1 \le x < 4 \\ 4 & x = 4 \end{cases}$$

Select one:

- A. 4
- B. Does not exist
- C. 0
- D. 1

The correct answer is: 0

Question **22**

Incorrect

Mark 0.00 out of 1.00

Find numbers a and b, or k, so that f is continuous at every point.

$$f(x) = \begin{cases} 8, & x < -4 \\ ax + b, & -4 \le x \le 4 \\ -24, & x > 4 \end{cases}$$

Select one:

- A. a = -4, b = -40
- B. a = 8, b = -24
- C. a = -4, b = -8
- D. Impossible

The correct answer is: a = -4, b = -8

Question **23**

Correct

Mark 1.00 out of 1.00

Find the limit.

If $\lim_{x \to 1} \frac{f(x) - 3}{x - 1} = 2$, find $\lim_{x \to 1} f(x)$.

Select one:

- A. 1
- B. 2
- C. 3 ✔
- D. Does not exist

The correct answer is: 3

Question **24**

Correct

Mark 1.00 out of 1.00

Solve the problem.

To what new value should f(1) be changed to remove the discontinuity?

$$f(x) = \begin{cases} x^2 + 2, & x < 1 \\ 1, & x = 1 \\ x + 2, & x > 1 \end{cases}$$

Select one:

- A. 3 ✔
- B. 4
- C. 2
- D. 1

The correct answer is: 3

Question **25**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to 5^-} \frac{1}{x^2 - 25}$$

Select one:

- A. 1
- B. 0
- C. ∞
- D. -∞ ✔

The correct answer is: -∞

Question **26**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to \infty} \frac{7x^3 - 6x^2 + 3x}{-x^3 - 2x + 7}$$

Select one:

- A. ∞
- B. 7
- C. -7 ✔
- D. $\frac{3}{2}$

The correct answer is: -7

Question **27**

Correct

Mark 1.00 out of 1.00

Divide numerator and denominator by the highest power of x in the denominator to find the limit.

$$\lim_{x \to -\infty} \frac{\sqrt[3]{x} + 2x - 3}{-5x + x^{2/3} + 3}$$

Select one:

- A. $-\frac{5}{2}$
- B. 0
- C. $-\frac{2}{5}$ ✔
- D. $-\infty$

The correct answer is: $-\frac{2}{5}$

Question **28**

Correct

Mark 1.00 out of 1.00

Find the limit.

$$\lim_{x \to -1^+} (x + 5)\left(\frac{|x + 1|}{x + 1}\right)$$

Select one:

- A. 6
- B. -4
- C. Does not exist
- D. 4 ✔

The correct answer is: 4

Question **29**

Correct

Mark 1.00 out of 1.00

Find the limit using $\lim_{x \to 0} \frac{\sin x}{x} = 1$.

$$\lim_{x \to 0} \frac{\sin(\sin x)}{\sin x}$$

Select one:

- A. 0
- B. -1
- C. does not exist
- D. 1 ✔

The correct answer is: 1

Question **30**

Correct

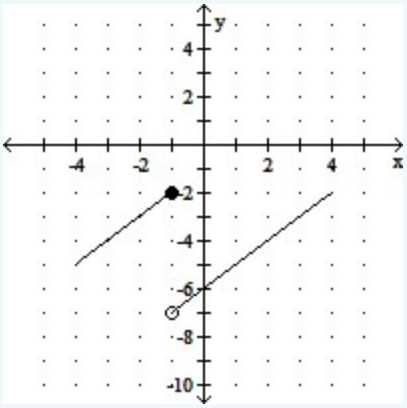
Mark 1.00 out of 1.00

Sketch a possible graph of a function that satisfies the given conditions.

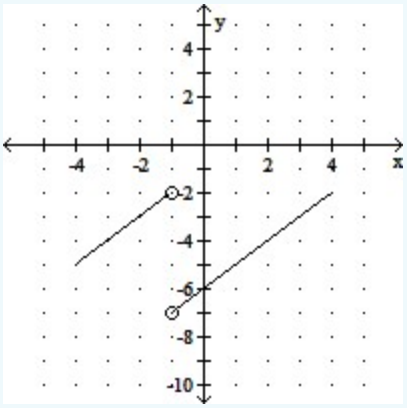
f(-1) = -7 ; $\lim_{x \to (-1)^-}$ f(x) = -2; $\lim_{x \to (-1)^+}$ f(x) = -7

Select one:

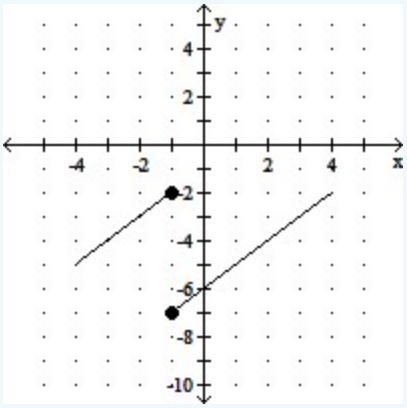
A.



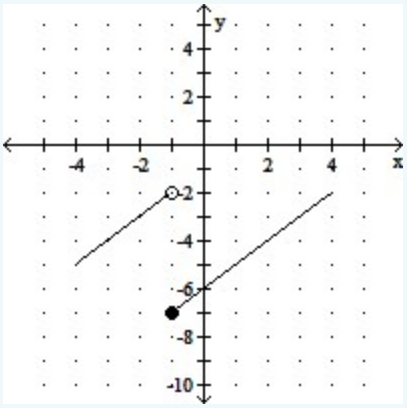
B.



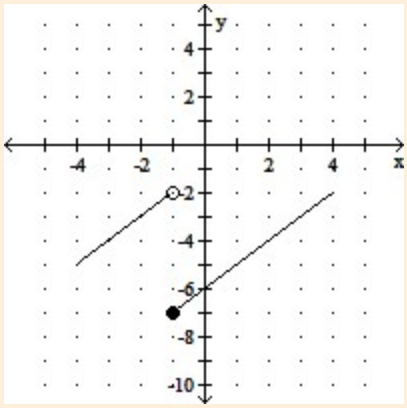
C.



D.



The correct answer is:



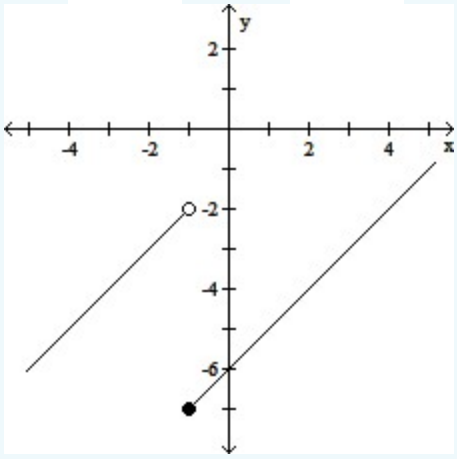
Question **31**

Correct

Mark 1.00 out of 1.00

Use the graph to estimate the specified limit.

Find $\lim_{x \to (-1)^-} f(x)$ and $\lim_{x \to (-1)^+} f(x)$



Select one:

- A. -5; -2
- B. -7; -5
- C. -2; -7 ✔
- D. -7; -2

The correct answer is: -2; -7