

تم تحميل هذا الملف من موقع المناهج الإماراتية



الملف ملخص وأوراق عمل للدرس Limit of Concept The

موقع المناهج ← المناهج الإماراتية ← الصف الثاني عشر المتقدم ← رياضيات ← الفصل الأول

روابط مواقع التواصل الاجتماعي بحسب الصف الثاني عشر المتقدم



روابط مواد الصف الثاني عشر المتقدم على تلغرام

[الرياضيات](#)

[اللغة الانجليزية](#)

[اللغة العربية](#)

[التربية الاسلامية](#)

المزيد من الملفات بحسب الصف الثاني عشر المتقدم والمادة رياضيات في الفصل الأول

رياضيات متكاملة دليل المعلم	1
دليل المعلم	2
الفصل الاول الوحدة الأولى المتباينات غير الخطية	3
جميع أوراق عمل	4
مراجعة نهائية قبل الامتحان	5

Lesson (2-2)

The Concept of Limit

Use numerical evidence to evaluate the limit

1

$$\lim_{x \rightarrow 2} \frac{x^2 - 4}{x - 2}$$

x							
$f(x)$							



2

$$\lim_{x \rightarrow -1} \frac{x^2 + x}{x^2 - x - 2}$$

x							
$f(x)$							



3

$$\lim_{x \rightarrow 2} \frac{x^2 - 5}{x - 2}$$

x							
$f(x)$							



A limit exists if and only if both corresponding one-sided limits exist and are equal.
That is,

$$\lim_{x \rightarrow a} f(x) = L, \text{ for some number } L, \text{ if and only if } \lim_{x \rightarrow a^-} f(x) = \lim_{x \rightarrow a^+} f(x) = L.$$

Use numerical evidence to evaluate the limit

4 $\lim_{x \rightarrow 0} \frac{\tan x}{x}$

AHMED ATA

AHMED ATA

AHMED ATA

x							
$f(x)$							



5 $\lim_{x \rightarrow 2} \frac{x - 2}{|x - 2|}$

AHMED ATA

AHMED ATA

AHMED ATA

x							
$f(x)$							



6 $\lim_{x \rightarrow 0} e^{-1/x^2}$

AHMED ATA

AHMED ATA

AHMED ATA

AHMED ATA

x							
$f(x)$							



AHMED ATA

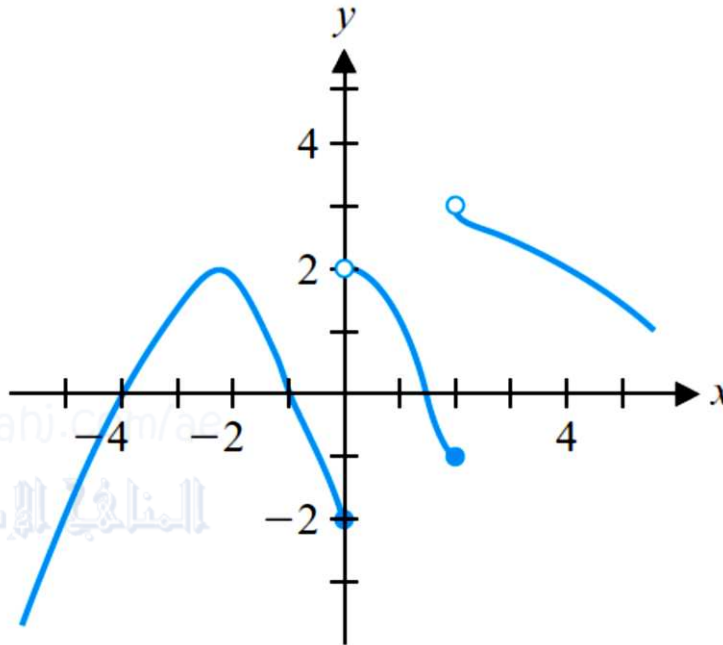
AHMED ATA

AHMED ATA

AHMED ATA

Determining Limits Graphically

7 Identify each limit or state that it does not exist.



$$\lim_{x \rightarrow 0^-} f(x)$$

$$\lim_{x \rightarrow 0^+} f(x)$$

$$\lim_{x \rightarrow 0} f(x)$$

$$\lim_{x \rightarrow -2^-} f(x)$$

$$\lim_{x \rightarrow -2^+} f(x)$$

$$\lim_{x \rightarrow -2} f(x)$$

$$\lim_{x \rightarrow -1} f(x)$$

$$\lim_{x \rightarrow 1^-} f(x)$$

$$\lim_{x \rightarrow 1} f(x)$$

$$\lim_{x \rightarrow 1^-} f(x)$$

$$\lim_{x \rightarrow 1^+} f(x)$$

$$\lim_{x \rightarrow 2} f(x)$$

$$\lim_{x \rightarrow 2^-} f(x)$$

$$\lim_{x \rightarrow -2^+} f(x)$$

$$\lim_{x \rightarrow -3} f(x)$$

$$\lim_{x \rightarrow 3^-} f(x)$$

$$\lim_{x \rightarrow 0} |f(x)|$$

$$\lim_{x \rightarrow 1} |f(x)|$$

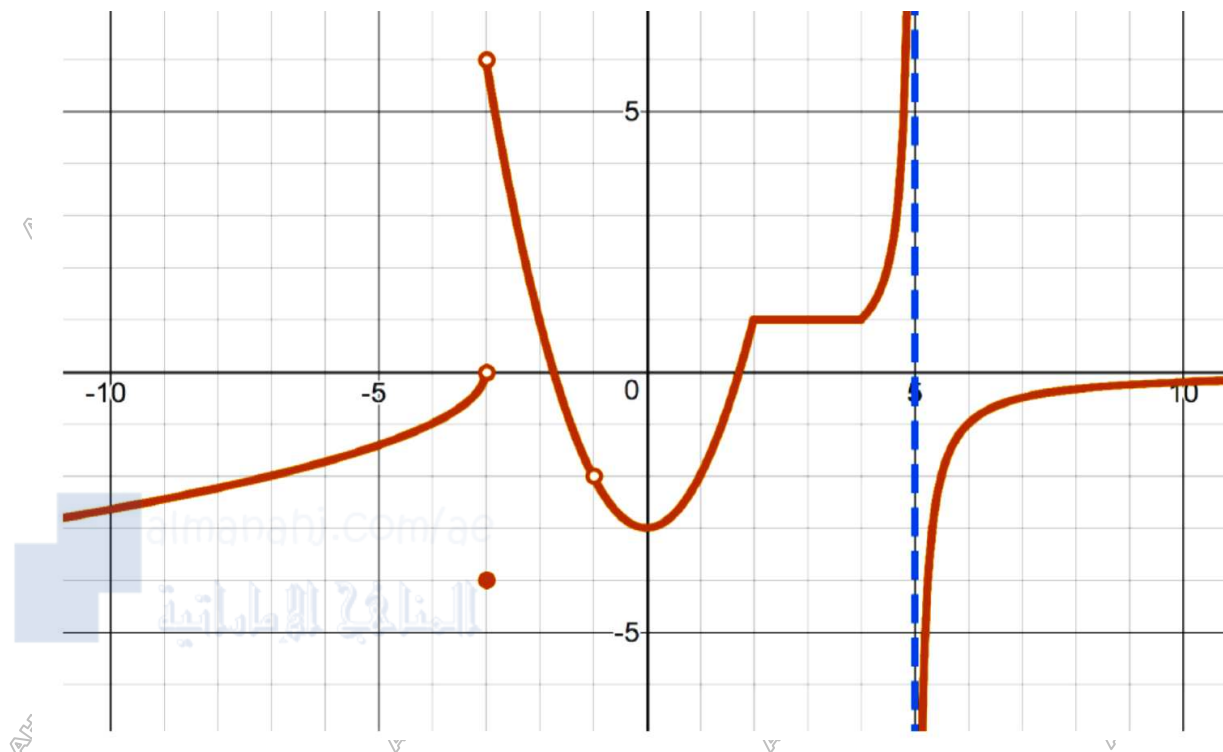
$$\lim_{x \rightarrow -1} \sqrt{f(x)}$$

$$\lim_{x \rightarrow -4} \sqrt{f(x)}$$

$$\lim_{x \rightarrow 1.5} \sqrt{f(x)}$$

8

Use the graph below to evaluate the following limits :



1. $\lim_{x \rightarrow -3^-} f(x) =$

2. $\lim_{x \rightarrow -3^+} f(x) =$

3. $\lim_{x \rightarrow -3} f(x) =$

4. $f(-3) =$

5. $\lim_{x \rightarrow -1^-} f(x) =$

6. $\lim_{x \rightarrow -1^+} f(x) =$

7. $\lim_{x \rightarrow 5} f(x) =$

8. $f(5) =$

9. $\lim_{x \rightarrow -1^-} f(x) =$

10. $\lim_{x \rightarrow -1^+} f(x) =$

11. $\lim_{x \rightarrow -1} f(x) =$

12. $f(-1) =$

13. $\lim_{x \rightarrow 2^-} f(x) =$

14. $\lim_{x \rightarrow 2^+} f(x) =$

15. $\lim_{x \rightarrow 2} f(x) =$

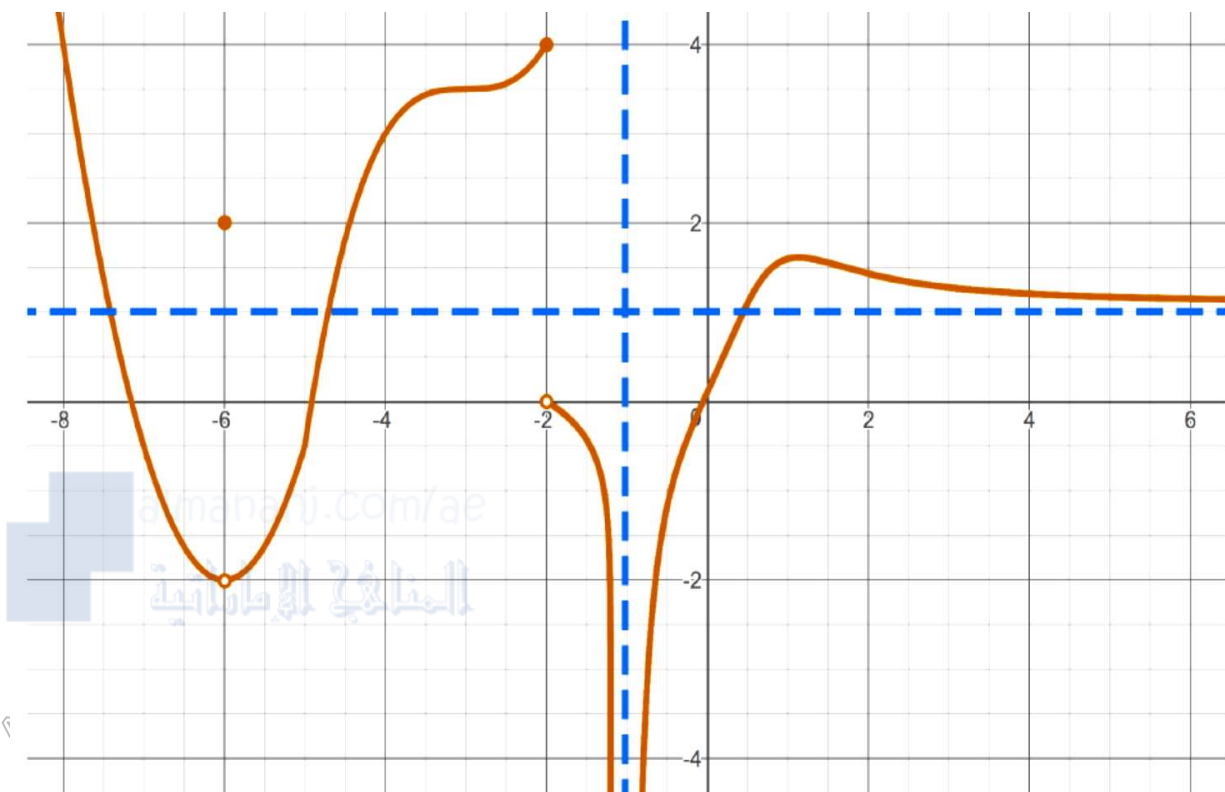
16. $f(2) =$

17. $\lim_{x \rightarrow +\infty} f(x) =$

18. $\lim_{x \rightarrow -\infty} f(x) =$

9

Use the graph below to evaluate the following limits :



1. $\lim_{x \rightarrow -6^-} f(x) =$

2. $\lim_{x \rightarrow -6^+} f(x) =$

3. $\lim_{x \rightarrow -6} f(x) =$

4. $f(-6) =$

5. $\lim_{x \rightarrow -4^-} f(x) =$

6. $\lim_{x \rightarrow -4^+} f(x) =$

7. $\lim_{x \rightarrow -4} f(x) =$

8. $f(-4) =$

9. $\lim_{x \rightarrow -1^-} f(x) =$

10. $\lim_{x \rightarrow -1^+} f(x) =$

11. $\lim_{x \rightarrow -1} f(x) =$

12. $f(-1) =$

13. $\lim_{x \rightarrow -2^-} f(x) =$

14. $\lim_{x \rightarrow -2^+} f(x) =$

15. $\lim_{x \rightarrow -2} f(x) =$

16. $f(-2) =$

17. $\lim_{x \rightarrow +\infty} f(x) =$

18. $\lim_{x \rightarrow -\infty} f(x) =$

AHMED ATA

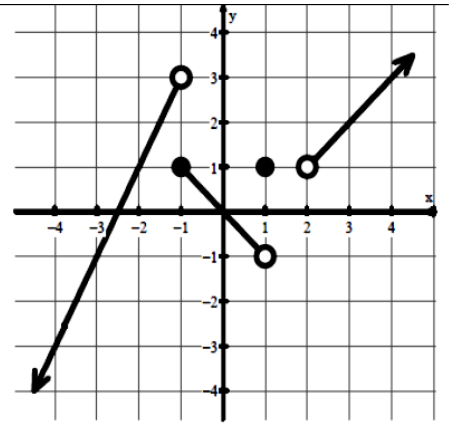
AHMED ATA

AHMED ATA

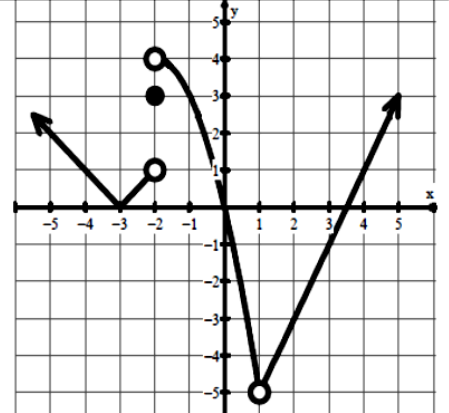
AHMED ATA

10 Use the graph below to evaluate the following limits :

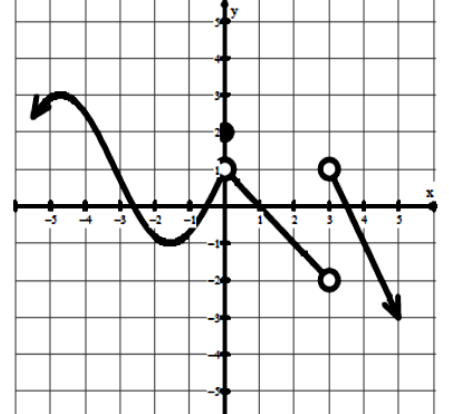
- 1.
- a. $\lim_{x \rightarrow -1^-} f(x) =$ b. $f(1) =$ c. $\lim_{x \rightarrow 0} f(x) =$
- d. $\lim_{x \rightarrow 2^+} f(x) =$ e. $f(-1) =$ f. $f(2) =$
- g. $\lim_{x \rightarrow -1^+} f(x) =$ h. $\lim_{x \rightarrow 1^-} f(x) =$ i. $\lim_{x \rightarrow 2} f(x) =$



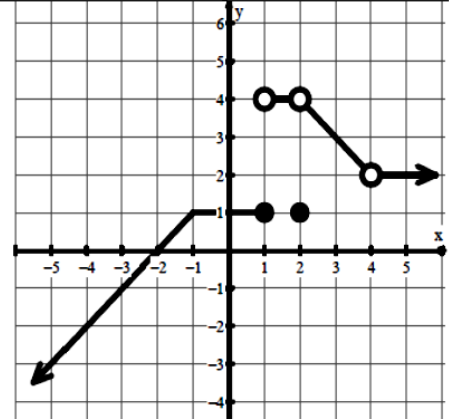
- 2.
- a. $\lim_{x \rightarrow -3} f(x) =$ b. $f(1) =$ c. $\lim_{x \rightarrow 1} f(x) =$
- d. $\lim_{x \rightarrow -2^+} f(x) =$ e. $f(3) =$ f. $\lim_{x \rightarrow -2^-} f(x) =$
- g. $\lim_{x \rightarrow -2} f(x) =$ h. $f(-2) =$ i. $f(4) =$



- 3.
- a. $\lim_{x \rightarrow 3^+} f(x) =$ b. $f(3) =$ c. $\lim_{x \rightarrow 0} f(x) =$
- d. $\lim_{x \rightarrow 3} f(x) =$ e. $f(0) =$ f. $\lim_{x \rightarrow 3^-} f(x) =$
- g. $\lim_{x \rightarrow 0^+} f(x) =$ h. $f(1) =$ i. $f(-1.6) =$

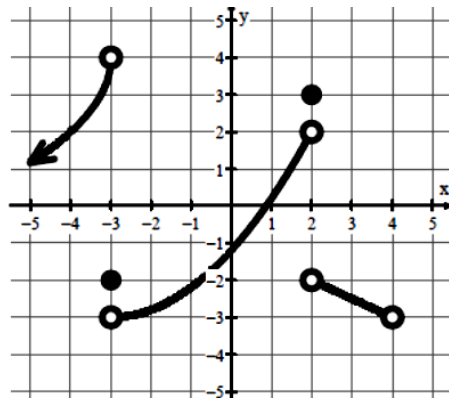


- 4.
- a. $\lim_{x \rightarrow -1^-} f(x) =$ b. $f(2) =$ c. $\lim_{x \rightarrow 2} f(x) =$
- d. $\lim_{x \rightarrow 1} f(x) =$ e. $f(4) =$ f. $\lim_{x \rightarrow 1^-} f(x) =$
- g. $\lim_{x \rightarrow -1^+} f(x) =$ h. $f(1) =$ i. $\lim_{x \rightarrow 4} f(x) =$

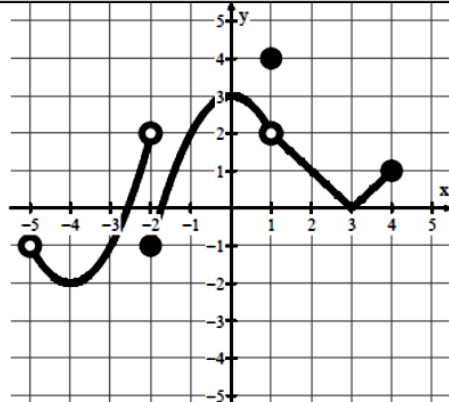


11 Use the graph below to evaluate the following limits :

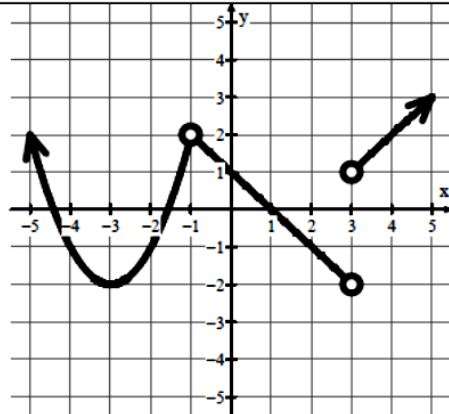
- 1.
- a. $\lim_{x \rightarrow 2} f(x) =$ b. $f(-3) =$ c. $\lim_{x \rightarrow -3^-} f(x) =$
 d. $\lim_{x \rightarrow 2^+} f(x) =$ e. $f(2) =$ f. $\lim_{x \rightarrow 2^-} f(x) =$
 g. $\lim_{x \rightarrow -3^+} f(x) =$ h. $f(4) =$ i. $\lim_{x \rightarrow -3} f(x) =$



- 2.
- a. $\lim_{x \rightarrow 1} f(x) =$ b. $f(-2) =$ c. $\lim_{x \rightarrow -2^+} f(x) =$
 d. $\lim_{x \rightarrow 2} f(x) =$ e. $f(-4) =$ f. $\lim_{x \rightarrow 1^-} f(x) =$
 g. $\lim_{x \rightarrow 1^+} f(x) =$ h. $f(-5) =$ i. $f(1) =$

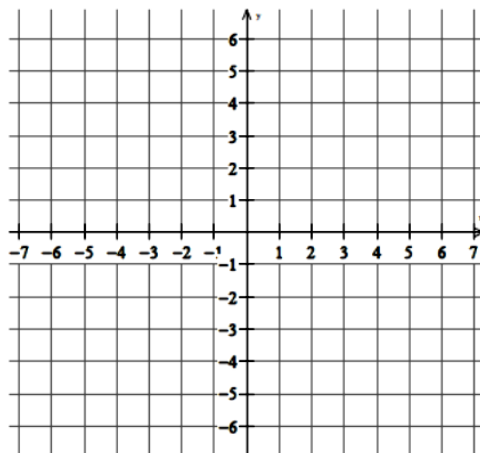


- 3.
- a. $\lim_{x \rightarrow 3^-} f(x) =$ b. $f(-1) =$ c. $\lim_{x \rightarrow -1} f(x) =$
 d. $\lim_{x \rightarrow 3} f(x) =$ e. $f(0) =$ f. $\lim_{x \rightarrow 3^+} f(x) =$
 g. $\lim_{x \rightarrow -1^+} f(x) =$ h. $f(3) =$ i. $\lim_{x \rightarrow -1^-} f(x) =$



4. Sketch a graph of a function f that satisfies all of the following conditions.

- a. $f(3) = 4$
 b. $\lim_{x \rightarrow 3^-} f(x) = 2$
 c. $\lim_{x \rightarrow 3^+} f(x) = -4$
 d. $f(-2)$ is undefined.
 e. $\lim_{x \rightarrow -2^-} f(x) > \lim_{x \rightarrow -2^+} f(x)$

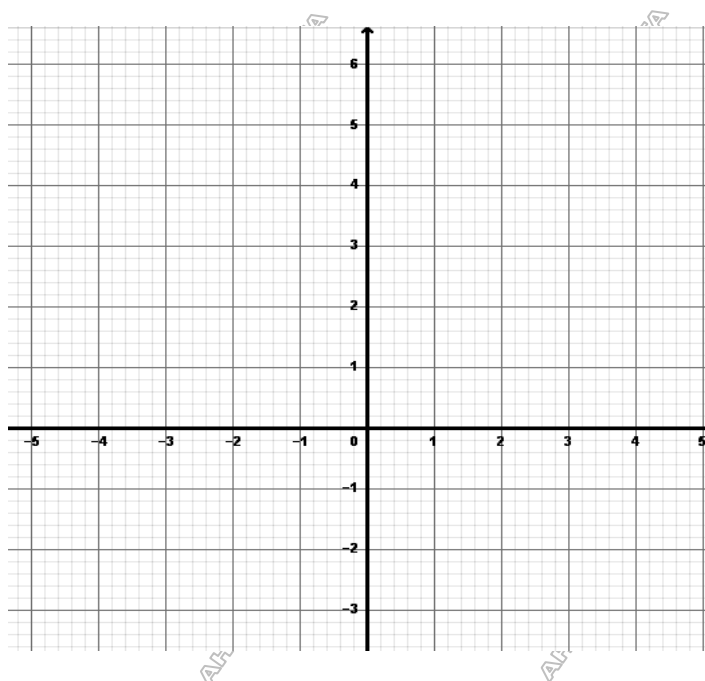


11 sketch a graph of a function with the given properties.

A $f(-1) = 2, f(0) = -1,$

$f(1) = 3$ and

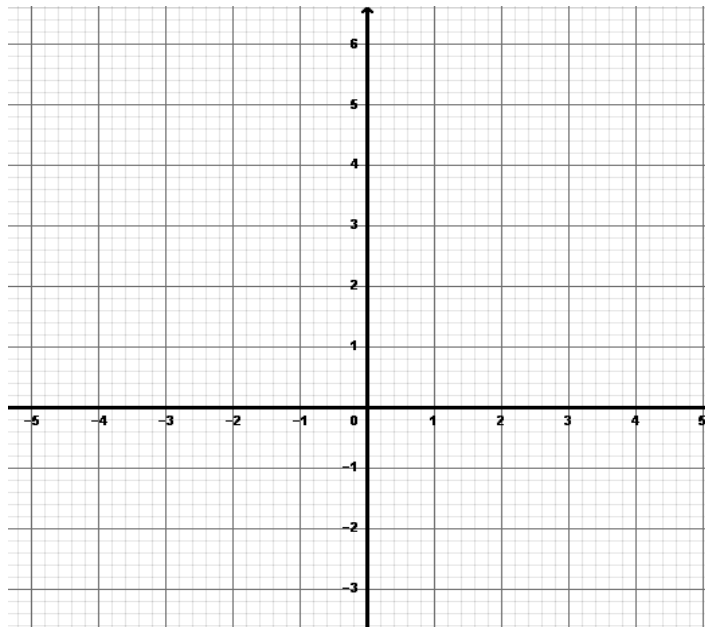
$\lim_{x \rightarrow 1} f(x)$ does not exist.



B $f(x) = 1$ for $-2 \leq x \leq 1,$

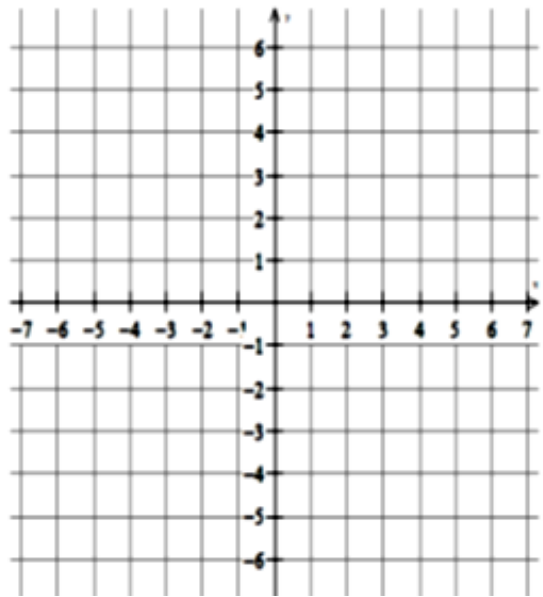
$\lim_{x \rightarrow 1^+} f(x) = 3$ and

$\lim_{x \rightarrow -2} f(x) = 1.$



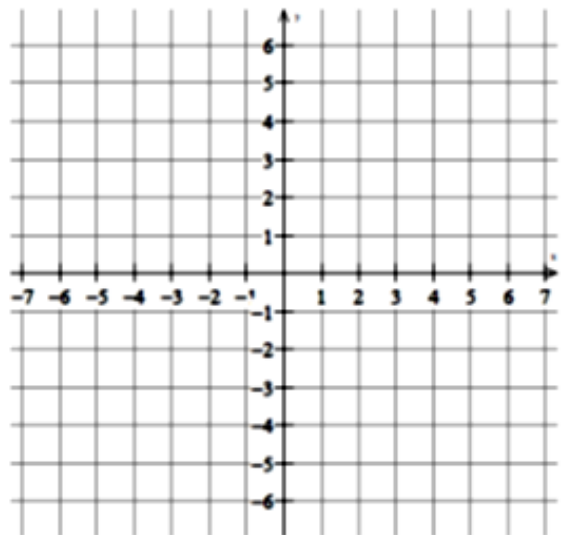
C

- a. $f(3) = 4$
- b. $\lim_{x \rightarrow 3^-} f(x) = 2$
- c. $\lim_{x \rightarrow 3^+} f(x) = -4$
- d. $f(-2)$ is undefined.
- e. $\lim_{x \rightarrow -2^-} f(x) > \lim_{x \rightarrow -2^+} f(x)$



D

- a. $g(-5) = -2$
- b. $\lim_{x \rightarrow -5^+} g(x) = 4$
- c. $\lim_{x \rightarrow -5^-} g(x) < g(-5)$
- d. g is decreasing on $x < -5$
- e. $\lim_{x \rightarrow -2} g(x) = g(-5)$



E

- a. $f(1) = 2$
- b. $\lim_{x \rightarrow 1^-} f(x) = 4$
- c. $\lim_{x \rightarrow 1^+} f(x) = -3$
- d. f is increasing on $x < -4$
- e. $\lim_{x \rightarrow -4^-} f(x) < \lim_{x \rightarrow -4^+} f(x)$

