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Limit02 piecewise Answers for No.9884

$$\lim_{x \rightarrow (-2)^-} f(x) = 6, \quad \lim_{x \rightarrow (-2)^+} f(x) = -19, \quad \lim_{x \rightarrow (-2)} f(x) = \text{does not exist}, \quad \text{"\# } f(x) \text{ is discontinuous at } x = -2"$$
$$\lim_{x \rightarrow 3^-} f(x) = 4, \quad \lim_{x \rightarrow 3^+} f(x) = 4, \quad \lim_{x \rightarrow 3} f(x) = 4, \quad \text{"\# f(x) is continuous at } x = 3\text{"}$$
$$\lim_{x \rightarrow 4^-} f(x) = 8, \quad \lim_{x \rightarrow 4^+} f(x) = 6, \quad \lim_{x \rightarrow 4} f(x) = \text{does not exist}, \quad \text{"\# f(x) is discontinuous at } x = 4\text{"}$$
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Limit02_piecewise Answers for No.9920
Ans01 > x | -3.2000| -3.1000| -3.0100| -3.0010| -3.0001|...| a = -3 |...| -2.9999| -2.9990| -2.9900| -2.9000| -2.8000|
        f(x) |-11.6000|-11.3000|-11.0300|-11.0030|-11.0003|...| f(-3) = 4 |...| 3.9999| 3.9990| 3.9900| 3.9000| 3.8000|
                lim_{x→(-3)-} f(x)=-11, , lim_{x→(-3)+} f(x)=4, , lim_{x→(-3)} f(x)= does not exist, , "#f(x) is discontinuous at x=-3"
Ans02 > x | 2.8000| 2.9000| 2.9900| 2.9990| 2.9999|...| a = 3 |...| 3.0001| 3.0010| 3.0100| 3.1000| 3.2000|
        f(x) | 4.0000| 4.0000| 4.0000| 4.0000| 4.0000|...| f(3) = 4 |...| 4.0001| 4.0010| 4.0100| 4.1000| 4.2000|
                lim_{x→3-} f(x)=4, , lim_{x→3+} f(x)=4, , lim_{x→3} f(x)=4, , "#f(x) is continuous at x=3"
Ans03 > x | 4.8000| 4.9000| 4.9900| 4.9990| 4.9999|...| a = 5 |...| 5.0001| 5.0010| 5.0100| 5.1000| 5.2000|
        f(x) | 3.2000| 3.1000| 3.0100| 3.0010| 3.0001|...| f(5) = 4 |...| 4.0000| 4.0000| 4.0000| 4.0000| 4.0000|
                lim_{x→5-} f(x)=3, , lim_{x→5+} f(x)=4, , lim_{x→5} f(x)= does not exist, , "#f(x) is discontinuous at x=5"

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      a   |    f(a)     | LH-Limit | RH-Limit | Limit | Continuity | 
-----|-----|-----|-----|-----|-----|-----|
Ans04 -1  |         2       |          |          | 2     | Continuous | 
      0  |         1       |          |          | 1     | Continuous | 
      1  |         0       |          |          | 0     | Continuous | 
      2  |        -1       |         -1 |         -1 | -1    | Continuous | 
      -3 |         4       |        -11 |          | 4     | Discontinuous | 
-----|-----|-----|-----|-----|-----|
Ans05 -4  |         10      |          |          | 10    | Continuous | 
      0  |         6       |          |          | 6     | Continuous | 
      7  |         16      |          |          | 16    | Continuous | 
      1  | undefined       |          |         -2 | DNE   | Discontinuous | 
      -1 |         10      |          |          | 10    | Continuous | 
-----|-----|-----|-----|-----|-----|
Ans06 -10 |         2       |          |          | DNE   | Discontinuous | 
      -9 |         1       |          |          | 1     | Continuous | 
      -8 |         0       |          |          | 0     | Continuous | 
      -2 |         2       |          |          | 2     | Continuous | 
      10 |         0       |          |          | 3     | Discontinuous | 

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Limit02_piecewise Answers for No.11154
Ans01 > x | -3.2000| -3.1000| -3.0100| -3.0010| -3.0001|...| a = -3 |...| -2.9999| -2.9990| -2.9900| -2.9000| -2.8000|
f(x) | -16.0000|-15.5000|-15.0500|-15.0050|-15.0005|...| f(-3) = 18 |...| 17.9996| 17.9960| 17.9600| 17.6000| 17.2000|

lim_{x→-3^-} f(x)=-15, , lim_{x→-3^+} f(x)=18, , lim_{x→-3} f(x)= does not exist, ," # f(x) is discontinuous at x = -3"
Ans02 > x | 4.8000| 4.9000| 4.9900| 4.9990| 4.9999|...| a = 5 |...| 5.0001| 5.0010| 5.0100| 5.1000| 5.2000|
f(x) | 3.0000| 3.0000| 3.0000| 3.0000| 3.0000|...| f(5) = 3 |...| 3.0001| 3.0010| 3.0100| 3.1000| 3.2000|

lim_{x→5^-} f(x)=3, , lim_{x→5^+} f(x)=3, , lim_{x→5} f(x)=3, ," # f(x) is continuous at x = 5"
Ans03 > x | 5.8000| 5.9000| 5.9900| 5.9990| 5.9999|...| a = 6 |...| 6.0001| 6.0010| 6.0100| 6.1000| 6.2000|
f(x) | 6.0000| 6.0000| 6.0000| 6.0000| 6.0000|...| f(6) = 9 |...| 8.9999| 8.9990| 8.9900| 8.9000| 8.8000|

lim_{x→6^-} f(x)=6, , lim_{x→6^+} f(x)=9, , lim_{x→6} f(x)= does not exist, ," # f(x) is discontinuous at x = 6"
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a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
-4	-20	-20	-20	-20	Continuous
0	6	6	6	6	Continuous
1	2	2	2	2	Continuous
6	-18	-18	-18	-18	Continuous
-3	18	-15	18	DNE	Discontinuous
-5	-26	-26	-26	-26	Continuous
0	7	7	7	7	Continuous
6	-5	-5	-5	-5	Continuous
4	undefined	-5	-5	-5	Discontinuous
-4	undefined	-22	19	DNE	Discontinuous
-10	2	1	2	DNE	Discontinuous
-3	1	1	1	1	Continuous
-1	undefined	infinity	1	DNE	Discontinuous
6	2	2	2	2	Continuous
8	-1	3	3	3	Discontinuous

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Limit02_piecewise Answers for No.11309

Ans01 >	x	1.8000	1.9000	1.9900	1.9990	1.9999	...	a = 2	...	2.0001	2.0010	2.0100	2.1000	2.2000
	f(x)	5.0000	5.5000	5.9500	5.9950	5.9995	...	f(2) = NA	...	-11.0007	-11.0070	-11.0700	-11.7000	-12.4000

$$\lim_{x \rightarrow 2^-} f(x) = 6, \quad \lim_{x \rightarrow 2^+} f(x) = -11, \quad \lim_{x \rightarrow 2} f(x) = \text{does not exist}, \quad \# f(x) \text{ is discontinuous at } x = 2$$

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Ans02 > x | 3.8000| 3.9000| 3.9900| 3.9990| 3.9999|...| a = 4 |...| 4.0001| 4.0010| 4.0100| 4.1000| 4.2000|
        f(x) | 5.2000| 5.1000| 5.0100| 5.0010| 5.0001|...| f( 4) = 5 |...| 6.0000| 6.0000| 6.0000| 6.0000| 6.0000|
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$$\lim_{x \rightarrow 4^-} f(x) = 5, \quad \lim_{x \rightarrow 4^+} f(x) = 6, \quad \lim_{x \rightarrow 4} f(x) = \text{does not exist}, \quad \text{"\# f(x) is discontinuous at } x = 4"$$

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Ans03 > x | 3.8000| 3.9000| 3.9900| 3.9990| 3.9999|...| a = 4 |...| 4.0001| 4.0010| 4.0100| 4.1000| 4.2000|
      f(x) | 4.8000| 4.9000| 4.9900| 4.9990| 4.9999|...| f( 4) = 2 |...| 5.0000| 5.0000| 5.0000| 5.0000| 5.0000|
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$$\lim_{x \rightarrow 4^-} f(x) = 5, \quad \lim_{x \rightarrow 4^+} f(x) = 5, \quad \lim_{x \rightarrow 4} f(x) = 5, \quad \text{"# } f(x) \text{ is discontinuous at } x = 4"$$

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-3	-19	-19	-19	-19	Continuous
	-2	-14	-14	-14	-14	Continuous
	0	-4	-4	-4	-4	Continuous
	5	-32	-32	-32	-32	Continuous
	2	undefined	6	-11	DNE	Discontinuous
Ans05	-2	11	11	11	11	Continuous
	0	7	7	7	7	Continuous
	7	40	40	40	40	Continuous
	5	undefined	-3	30	DNE	Discontinuous
	-4	15	15	15	15	Continuous
Ans06	-9	1	1	1	1	Continuous
	-7	undefined	1	1	1	Discontinuous
	-3	1	1	1	1	Continuous
	-2	2	2	2	2	Continuous
	8	-1	3	3	3	Discontinuous

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Limit02_piecewise Answers for No.13349
Ans01 > x | 1.8000| 1.9000| 1.9900| 1.9990| 1.9999|...| a = 2 |...| 2.0001| 2.0010| 2.0100| 2.1000| 2.2000|
f(x) | -3.6000| -3.8000| -3.9800| -3.9980| -3.9998|...| f( 2) = 13 |...| 13.0007| 13.0070| 13.0700| 13.7000| 14.4000|

lim_{x \to 2^-} f(x) = -4, , lim_{x \to 2^+} f(x) = 13, , lim_{x \to 2} f(x) = does not exist, , "# f(x) is discontinuous at x = 2"

Ans02 > x | 4.8000| 4.9000| 4.9900| 4.9990| 4.9999|...| a = 5 |...| 5.0001| 5.0010| 5.0100| 5.1000| 5.2000|
f(x) | 5.0000| 5.0000| 5.0000| 5.0000| 5.0000|...| f( 5) = 6 |...| 6.0001| 6.0010| 6.0100| 6.1000| 6.2000|

lim_{x \to 5^-} f(x) = 5, , lim_{x \to 5^+} f(x) = 6, , lim_{x \to 5} f(x) = does not exist, , "# f(x) is discontinuous at x = 5"

Ans03 > x | 2.8000| 2.9000| 2.9900| 2.9990| 2.9999|...| a = 3 |...| 3.0001| 3.0010| 3.0100| 3.1000| 3.2000|
f(x) | 3.8000| 3.9000| 3.9900| 3.9990| 3.9999|...| f( 3) = 5 |...| 4.0000| 4.0000| 4.0000| 4.0000| 4.0000|

lim_{x \to 3^-} f(x) = 4, , lim_{x \to 3^+} f(x) = 4, , lim_{x \to 3} f(x) = 4, , "# f(x) is discontinuous at x = 3"

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a | f(a) | LH-Limit | RH-Limit | Limit | Continuity |
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Ans04 -4 | 8 | 8 | 8 | 8 | Continuous |
-1 | 2 | 2 | 2 | 2 | Continuous |
0 | 0 | 0 | 0 | 0 | Continuous |
6 | 41 | 41 | 41 | 41 | Continuous |
2 | 13 | -4 | 13 | DNE | Discontinuous |
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Ans05 -1 | 3 | 3 | 3 | 3 | Continuous |
0 | 7 | 7 | 7 | 7 | Continuous |
2 | -8 | -8 | -8 | -8 | Continuous |
1 | undefined | 11 | -3 | DNE | Discontinuous |
-4 | -9 | -9 | -9 | -9 | Continuous |
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Ans06 -12 | 1 | 1 | 1 | 1 | Continuous |
-7 | undefined | 1 | 1 | 1 | Discontinuous |
-5 | 1 | 1 | infinity | DNE | Discontinuous |
10 | 0 | 3 | 3 | 3 | Discontinuous |
12 | 4 | 2 | 2 | 2 | Discontinuous |
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