Limit02_piecewise Answers for No.9395

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)	2.2000	2.1000	2.0100	2.0010	2.0001	...	f(2) =	2	...	9.0007	9.0070	9.0700	9.7000	10.4000

$$\lim_{x \to 2-} f(x) = 2, \quad , \lim_{x \to 2+} f(x) = 9, \quad , \lim_{x \to 2} f(x) = \textit{does not exist}, \quad ," \text{ \# f(x) is discontinuous at x = 2}"$$

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)	8.0000	8.0000	8.0000	8.0000	8.0000	...	f(3) =	8	...	6.9999	6.9990	6.9900	6.9000	6.8000

$$\lim_{x \to 3-} f(x) = 8, \quad , \lim_{x \to 3+} f(x) = 7, \quad , \lim_{x \to 3} f(x) = \textit{does not exist}, \quad ," \text{ \# f(x) is discontinuous at x = 3}"$$

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) =	6	...	5.9999	5.9990	5.9900	5.9000	5.8000

$$\lim_{x \to 6-} f(x) = 6, \quad , \lim_{x \to 6+} f(x) = 6, \quad , \lim_{x \to 6} f(x) = 6, \quad ," \text{ \# f(x) is continuous at x = 6}"$$

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-5	9	9	9	9	Continuous
	-1	5	5	5	5	Continuous
	0	4	4	4	4	Continuous
	1	3	3	3	3	Continuous
	2	2	2	9	DNE	Discontinuous
Ans05	-5	3	3	3	3	Continuous
	0	2	2	2	2	Continuous
	7	17	17	17	17	Continuous
	5	17	17	17	17	Continuous
	-2	-4	-3	-4	DNE	Discontinuous
Ans06	-9	1	1	1	1	Continuous
	-5	1	1	infinity	DNE	Discontinuous
	-4	2	2	2	2	Continuous
	9	undefined	infinity	infinity	infinity	Discontinuous
	12	4	2	2	2	Discontinuous

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Limit02_piecewise Answers for No.9419

Ans01 >	x	-2.2000	-2.1000	-2.0100	-2.0010	-2.0001	...	a = -2	...	-1.9999	-1.9990	-1.9900	-1.9000	-1.8000
	f(x)	6.8000	6.4000	6.0400	6.0040	6.0004	...	f(-2) = 6	...	-18.9993	-18.9930	-18.9300	-18.3000	-17.6000

$$\lim_{x \to (-2)-} f(x) = 6, \quad , \lim_{x \to (-2)+} f(x) = -19, \quad , \lim_{x \to (-2)} f(x) = \textit{does not exist}, \quad , \text{" \# f(x) is discontinuous at x = -2"}$$

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)	3.8000	3.9000	3.9900	3.9990	3.9999	...	f(5) = 4	...	4.0000	4.0000	4.0000	4.0000	4.0000

$$\lim_{x \to 5-} f(x) = 4, \quad , \lim_{x \to 5+} f(x) = 4, \quad , \lim_{x \to 5} f(x) = 4, \quad , \text{" \# f(x) is continuous at x = 5"}$$

Ans03 >	x	6.8000	6.9000	6.9900	6.9990	6.9999	...	a = 7	...	7.0001	7.0010	7.0100	7.1000	7.2000
	f(x)	6.0000	6.0000	6.0000	6.0000	6.0000	...	f(7) = 3	...	2.9999	2.9990	2.9900	2.9000	2.8000

$$\lim_{x \to 7-} f(x) = 6, \quad , \lim_{x \to 7+} f(x) = 3, \quad , \lim_{x \to 7} f(x) = \textit{does not exist}, \quad , \text{" \# f(x) is discontinuous at x = 7"}$$

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-6	22	22	22	22	Continuous
	0	-5	-5	-5	-5	Continuous
	2	9	9	9	9	Continuous
	4	23	23	23	23	Continuous
	-2	6	6	-19	DNE	Discontinuous
Ans05	-6	13	13	13	13	Continuous
	0	12	12	12	12	Continuous
	1	12	12	12	12	Continuous
	2	undefined	12	2	DNE	Discontinuous
	-5	undefined	12	12	12	Discontinuous
Ans06	-8	0	0	0	0	Continuous
	-7	undefined	1	1	1	Discontinuous
	-2	2	2	2	2	Continuous
	1	1	1	1	1	Continuous
	8	-1	3	3	3	Discontinuous

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Limit02_piecewise Answers for No.9428

Ans01 >

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)	12.4000	12.7000	12.9700	12.9970	12.9997	...	f(3) = 13	...	-6.0004	-6.0040	-6.0400	-6.4000	-6.8000

$\lim_{x\to 3-} f(x) = 13,\ ,\ \lim_{x\to 3+} f(x) = -6,\ ,\ \lim_{x\to 3} f(x) = \textit{does not exist},$, " # f(x) is discontinuous at x = 3"

Ans02 >

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)	1.0000	1.0000	1.0000	1.0000	1.0000	...	f(2) = 3	...	2.9999	2.9990	2.9900	2.9000	2.8000

$\lim_{x\to 2-} f(x) = 1,\ ,\ \lim_{x\to 2+} f(x) = 3,\ ,\ \lim_{x\to 2} f(x) = \textit{does not exist},$, " # f(x) is discontinuous at x = 2"

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)	6.0000	6.0000	6.0000	6.0000	6.0000	...	f(5) = 3	...	6.0001	6.0010	6.0100	6.1000	6.2000

$\lim_{x\to 5-} f(x) = 6,\ ,\ \lim_{x\to 5+} f(x) = 6,\ ,\ \lim_{x\to 5} f(x) = 6,$, " # f(x) is discontinuous at x = 5"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-4	-8	-8	-8	-8	Continuous
	-3	-5	-5	-5	-5	Continuous
	0	4	4	4	4	Continuous
	6	-18	-18	-18	-18	Continuous
	3	13	13	-6	DNE	Discontinuous
Ans05	-6	-30	-30	-30	-30	Continuous
	0	-6	-6	-6	-6	Continuous
	1	-6	-6	-6	-6	Continuous
	2	-6	-6	-6	-6	Continuous
	-5	undefined	-26	-6	DNE	Discontinuous
Ans06	-12	1	1	1	1	Continuous
	-5	1	1	infinity	DNE	Discontinuous
	3	undefined	-1	-infinity	DNE	Discontinuous
	8	-1	3	3	3	Discontinuous
	12	4	2	2	2	Discontinuous

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Limit02_piecewise Answers for No.9459

Ans01 >

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)	6.8000	6.9000	6.9900	6.9990	6.9999	...	f(3) = NA	...	-16.0006	-16.0060	-16.0600	-16.6000	-17.2000

$\lim_{x \to 3-} f(x) = 7$, , $\lim_{x \to 3+} f(x) = -16$, , $\lim_{x \to 3} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 3"

Ans02 >

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	5.0000	5.0000	5.0000	5.0000	...	f(2) = 5	...	4.9999	4.9990	4.9900	4.9000	4.8000

$\lim_{x \to 2-} f(x) = 5$, , $\lim_{x \to 2+} f(x) = 5$, , $\lim_{x \to 2} f(x) = 5$, , " # f(x) is continuous at x = 2"

Ans03 >

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)	7.8000	7.9000	7.9900	7.9990	7.9999	...	f(2) = 5	...	5.0000	5.0000	5.0000	5.0000	5.0000

$\lim_{x \to 2-} f(x) = 8$, , $\lim_{x \to 2+} f(x) = 5$, , $\lim_{x \to 2} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 2"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-3	1	1	1	1	Continuous
	-2	2	2	2	2	Continuous
	0	4	4	4	4	Continuous
	7	-40	-40	-40	-40	Continuous
	3	undefined	7	-16	DNE	Discontinuous
Ans05	-5	-18	-18	-18	-18	Continuous
	0	-11	-11	-11	-11	Continuous
	4	-11	-11	-11	-11	Continuous
	5	-11	-11	-11	-11	Continuous
	-1	-11	-2	-11	DNE	Discontinuous
Ans06	-8	0	0	0	0	Continuous
	-4	2	2	2	2	Continuous
	3	undefined	-1	-infinity	DNE	Discontinuous
	9	undefined	infinity	infinity	infinity	Discontinuous
	10	0	3	3	3	Discontinuous

Limit02_piecewise Answers for No.9476

Ans01 >

x	-2.2000	-2.1000	-2.0100	-2.0010	-2.0001	...	a	= -2	...	-1.9999	-1.9990	-1.9900	-1.9000	-1.8000
f(x)	-16.4000	-15.7000	-15.0700	-15.0070	-15.0007	...	f(-2)	= NA	...	4.9999	4.9990	4.9900	4.9000	4.8000

$\lim_{x \to (-2)-} f(x) = -15$, , $\lim_{x \to (-2)+} f(x) = 5$, , $\lim_{x \to (-2)} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = -2"

Ans02 >

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)	7.2000	7.1000	7.0100	7.0010	7.0001	...	f(2)	= 8	...	8.0000	8.0000	8.0000	8.0000	8.0000

$\lim_{x \to 2-} f(x) = 7$, , $\lim_{x \to 2+} f(x) = 8$, , $\lim_{x \to 2} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 2"

Ans03 >

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)	4.8000	4.9000	4.9900	4.9990	4.9999	...	f(2)	= 5	...	5.0000	5.0000	5.0000	5.0000	5.0000

$\lim_{x \to 2-} f(x) = 5$, , $\lim_{x \to 2+} f(x) = 5$, , $\lim_{x \to 2} f(x) = 5$, , " # f(x) is continuous at x = 2"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-4	-29	-29	-29	-29	Continuous
	0	3	3	3	3	Continuous
	4	-1	-1	-1	-1	Continuous
	5	-2	-2	-2	-2	Continuous
	-2	undefined	-15	5	DNE	Discontinuous
Ans05	-3	-7	-7	-7	-7	Continuous
	0	5	5	5	5	Continuous
	4	13	13	13	13	Continuous
	2	13	13	13	13	Continuous
	-4	11	11	-11	DNE	Discontinuous
Ans06	-10	2	1	2	DNE	Discontinuous
	-2	2	2	2	2	Continuous
	0	5	2	2	2	Discontinuous
	2	undefined	0	0	0	Discontinuous
	12	4	2	2	2	Discontinuous

Limit02_piecewise Answers for No.9491

Ans01 >	x	0.8000	0.9000	0.9900	0.9990	0.9999	...	a = 1	...	1.0001	1.0010	1.0100	1.1000	1.2000
	f(x)	9.0000	9.5000	9.9500	9.9950	9.9995	...	f(1) = 10	...	-2.0003	-2.0030	-2.0300	-2.3000	-2.6000

$$\lim_{x \to 1-} f(x) = 10, \quad , \lim_{x \to 1+} f(x) = -2, \quad , \lim_{x \to 1} f(x) = \textit{does not exist}, \quad , \text{" \# f(x) is discontinuous at x = 1"}$$

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)	3.8000	3.9000	3.9900	3.9990	3.9999	...	f(3) = 4	...	4.0000	4.0000	4.0000	4.0000	4.0000

$$\lim_{x \to 3-} f(x) = 4, \quad , \lim_{x \to 3+} f(x) = 4, \quad , \lim_{x \to 3} f(x) = 4, \quad , \text{" \# f(x) is continuous at x = 3"}$$

Ans03 >	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)	7.8000	7.9000	7.9900	7.9990	7.9999	...	f(2) = 8	...	5.0000	5.0000	5.0000	5.0000	5.0000

$$\lim_{x \to 2-} f(x) = 8, \quad , \lim_{x \to 2+} f(x) = 5, \quad , \lim_{x \to 2} f(x) = \textit{does not exist}, \quad , \text{" \# f(x) is discontinuous at x = 2"}$$

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-3	-10	-10	-10	-10	Continuous
	-1	0	0	0	0	Continuous
	0	5	5	5	5	Continuous
	5	-14	-14	-14	-14	Continuous
	1	10	10	-2	DNE	Discontinuous
Ans05	-6	0	0	0	0	Continuous
	0	5	5	5	5	Continuous
	2	7	7	7	7	Continuous
	1	7	7	7	7	Continuous
	-2	undefined	-4	1	DNE	Discontinuous
Ans06	-12	1	1	1	1	Continuous
	3	undefined	-1	-infinity	DNE	Discontinuous
	6	2	2	2	2	Continuous
	8	-1	3	3	3	Discontinuous
	9	undefined	infinity	infinity	infinity	Discontinuous

Limit02_piecewise Answers for No.9633

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)	11.4000	11.7000	11.9700	11.9970	11.9997	...	f(2) = -7	...	-7.0002	-7.0020	-7.0200	-7.2000	-7.4000

$\lim_{x\to 2-} f(x) = 12,\ ,\ \lim_{x\to 2+} f(x) = -7,\ ,\ \lim_{x\to 2} f(x) = \textit{does not exist},$," # f(x) is discontinuous at x = 2"

Ans02 >

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)	7.2000	7.1000	7.0100	7.0010	7.0001	...	f(2) = 6	...	6.0000	6.0000	6.0000	6.0000	6.0000

$\lim_{x\to 2-} f(x) = 7,\ ,\ \lim_{x\to 2+} f(x) = 6,\ ,\ \lim_{x\to 2} f(x) = \textit{does not exist},$," # f(x) is discontinuous at x = 2"

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) = 6	...	6.0001	6.0010	6.0100	6.1000	6.2000

$\lim_{x\to 6-} f(x) = 6,\ ,\ \lim_{x\to 6+} f(x) = 6,\ ,\ \lim_{x\to 6} f(x) = 6,$," # f(x) is continuous at x = 6"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-6	-12	-12	-12	-12	Continuous
	-1	3	3	3	3	Continuous
	0	6	6	6	6	Continuous
	3	-9	-9	-9	-9	Continuous
	2	-7	12	-7	DNE	Discontinuous
Ans05	-4	7	7	7	7	Continuous
	0	2	2	2	2	Continuous
	1	-3	-3	-3	-3	Continuous
	5	-23	-23	17	DNE	Discontinuous
	-1	7	7	7	7	Continuous
Ans06	-11	3	1	1	1	Discontinuous
	-10	2	1	2	DNE	Discontinuous
	-7	undefined	1	1	1	Discontinuous
	-3	1	1	1	1	Continuous
	9	undefined	infinity	infinity	infinity	Discontinuous

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Limit02_piecewise Answers for No.9711

Ans01 >

x	-2.2000	-2.1000	-2.0100	-2.0010	-2.0001	...	a = -2	...	-1.9999	-1.9990	-1.9900	-1.9000	-1.8000
f(x)	10.6000	10.3000	10.0300	10.0030	10.0003	...	f(-2) = NA	...	-11.9996	-11.9960	-11.9600	-11.6000	-11.2000

$$\lim_{x\to(-2)-} f(x) = 10, \quad , \lim_{x\to(-2)+} f(x) = -12, \quad , \lim_{x\to(-2)} f(x) = \textit{does not exist}, \quad ," \text{ \# f(x) is discontinuous at x = -2"}$$

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)	7.0000	7.0000	7.0000	7.0000	7.0000	...	f(4) = 7	...	7.0001	7.0010	7.0100	7.1000	7.2000

$$\lim_{x\to 4-} f(x) = 7, \quad , \lim_{x\to 4+} f(x) = 7, \quad , \lim_{x\to 4} f(x) = 7, \quad ," \text{ \# f(x) is continuous at x = 4"}$$

Ans03 >

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)	3.2000	3.1000	3.0100	3.0010	3.0001	...	f(2) = 6	...	6.0000	6.0000	6.0000	6.0000	6.0000

$$\lim_{x\to 2-} f(x) = 3, \quad , \lim_{x\to 2+} f(x) = 6, \quad , \lim_{x\to 2} f(x) = \textit{does not exist}, \quad ," \text{ \# f(x) is discontinuous at x = 2"}$$

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-6	22	22	22	22	Continuous
	0	-4	-4	-4	-4	Continuous
	4	12	12	12	12	Continuous
	7	24	24	24	24	Continuous
	-2	undefined	10	-12	DNE	Discontinuous
Ans05	-2	-14	-14	-14	-14	Continuous
	0	-14	-14	-14	-14	Continuous
	7	-39	-39	-39	-39	Continuous
	2	-14	-14	-14	-14	Continuous
	-5	-14	-23	-14	DNE	Discontinuous
Ans06	-2	2	2	2	2	Continuous
	-1	undefined	infinity	1	DNE	Discontinuous
	3	undefined	-1	-infinity	DNE	Discontinuous
	6	2	2	2	2	Continuous
	9	undefined	infinity	infinity	infinity	Discontinuous

Limit02_piecewise Answers for No.9784

Ans01 >

x	-1.2000	-1.1000	-1.0100	-1.0010	-1.0001	...	a = -1	...	-0.9999	-0.9990	-0.9900	-0.9000	-0.8000
f(x)	-8.2000	-7.6000	-7.0600	-7.0060	-7.0006	...	f(-1) = 0	...	-0.0002	-0.0020	-0.0200	-0.2000	-0.4000

$\lim_{x\to(-1)-} f(x) = -7,\ ,\ \lim_{x\to(-1)+} f(x) = 0,\ ,\ \lim_{x\to(-1)} f(x) = \textit{does not exist},$ " # f(x) is discontinuous at x = -1"

Ans02 >

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)	4.8000	4.9000	4.9900	4.9990	4.9999	...	f(2) = 5	...	7.0000	7.0000	7.0000	7.0000	7.0000

$\lim_{x\to 2-} f(x) = 5,\ ,\ \lim_{x\to 2+} f(x) = 7,\ ,\ \lim_{x\to 2} f(x) = \textit{does not exist},$ " # f(x) is discontinuous at x = 2"

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)	6.0000	6.0000	6.0000	6.0000	6.0000	...	f(5) = 6	...	6.0001	6.0010	6.0100	6.1000	6.2000

$\lim_{x\to 5-} f(x) = 6,\ ,\ \lim_{x\to 5+} f(x) = 6,\ ,\ \lim_{x\to 5} f(x) = 6,$ " # f(x) is continuous at x = 5"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-5	-31	-31	-31	-31	Continuous
	0	-2	-2	-2	-2	Continuous
	1	-4	-4	-4	-4	Continuous
	7	-16	-16	-16	-16	Continuous
	-1	0	-7	0	DNE	Discontinuous
Ans05	-5	-11	-11	-11	-11	Continuous
	0	1	1	1	1	Continuous
	4	17	17	17	17	Continuous
	5	21	21	0	DNE	Discontinuous
	-3	-11	-11	-11	-11	Continuous
Ans06	-9	1	1	1	1	Continuous
	-6	1	1	1	1	Continuous
	2	undefined	0	0	0	Discontinuous
	8	-1	3	3	3	Discontinuous
	12	4	2	2	2	Discontinuous

Limit02_piecewise Answers for No.10143

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Ans01 >    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)  | 15.0000| 15.5000| 15.9500| 15.9950| 15.9995|...| f( 3) = -22 |...|-22.0007|-22.0070|-22.0700|-22.7000|-23.4000|
```

$$\lim_{x \to 3-} f(x) = 16, \quad , \lim_{x \to 3+} f(x) = -22, \quad , \lim_{x \to 3} f(x) = \textit{does not exist}, \quad ," \text{ \# f(x) is discontinuous at x = 3}"$$

```
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)  |  2.8000|  2.9000|  2.9900|  2.9990|  2.9999|...| f( 4) =   3 |...|  3.0000|  3.0000|  3.0000|  3.0000|  3.0000|
```

$$\lim_{x \to 4-} f(x) = 3, \quad , \lim_{x \to 4+} f(x) = 3, \quad , \lim_{x \to 4} f(x) = 3, \quad ," \text{ \# f(x) is continuous at x = 4}"$$

```
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)  |  6.0000|  6.0000|  6.0000|  6.0000|  6.0000|...| f( 5) =   6 |...|  2.9999|  2.9990|  2.9900|  2.9000|  2.8000|
```

$$\lim_{x \to 5-} f(x) = 6, \quad , \lim_{x \to 5+} f(x) = 3, \quad , \lim_{x \to 5} f(x) = \textit{does not exist}, \quad ," \text{ \# f(x) is discontinuous at x = 5}"$$

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-7	-34	-34	-34	-34	Continuous
	-4	-19	-19	-19	-19	Continuous
	0	1	1	1	1	Continuous
	6	-43	-43	-43	-43	Continuous
	3	-22	16	-22	DNE	Discontinuous
Ans05	-3	-12	-12	-12	-12	Continuous
	0	-12	-12	-12	-12	Continuous
	5	-27	-27	-27	-27	Continuous
	2	undefined	-12	-12	-12	Discontinuous
	-5	-20	-20	-12	DNE	Discontinuous
Ans06	-4	2	2	2	2	Continuous
	-3	1	1	1	1	Continuous
	6	2	2	2	2	Continuous
	9	undefined	infinity	infinity	infinity	Discontinuous
	12	4	2	2	2	Discontinuous

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Limit02_piecewise Answers for No.10626

Ans01 >

x	0.8000	0.9000	0.9900	0.9990	0.9999	...	a = 1	...	1.0001	1.0010	1.0100	1.1000	1.2000
f(x)	6.8000	6.9000	6.9900	6.9990	6.9999	...	f(1) = NA	...	-10.0007	-10.0070	-10.0700	-10.7000	-11.4000

$\lim_{x \to 1-} f(x) = 7$, , $\lim_{x \to 1+} f(x) = -10$, , $\lim_{x \to 1} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 1"

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)	2.0000	2.0000	2.0000	2.0000	2.0000	...	f(3) = 2	...	4.0001	4.0010	4.0100	4.1000	4.2000

$\lim_{x \to 3-} f(x) = 2$, , $\lim_{x \to 3+} f(x) = 4$, , $\lim_{x \to 3} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 3"

Ans03 >

x	7.8000	7.9000	7.9900	7.9990	7.9999	...	a = 8	...	8.0001	8.0010	8.0100	8.1000	8.2000
f(x)	4.0000	4.0000	4.0000	4.0000	4.0000	...	f(8) = 4	...	3.9999	3.9990	3.9900	3.9000	3.8000

$\lim_{x \to 8-} f(x) = 4$, , $\lim_{x \to 8+} f(x) = 4$, , $\lim_{x \to 8} f(x) = 4$, , " # f(x) is continuous at x = 8"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-6	0	0	0	0	Continuous
	-3	3	3	3	3	Continuous
	0	6	6	6	6	Continuous
	4	-31	-31	-31	-31	Continuous
	1	undefined	7	-10	DNE	Discontinuous
Ans05	-3	3	3	3	3	Continuous
	0	6	6	6	6	Continuous
	1	7	7	7	7	Continuous
	2	8	8	8	8	Continuous
	-4	7	7	2	DNE	Discontinuous
Ans06	-12	1	1	1	1	Continuous
	-10	2	1	2	DNE	Discontinuous
	-8	0	0	0	0	Continuous
	-3	1	1	1	1	Continuous
	0	5	2	2	2	Discontinuous

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Limit02_piecewise Answers for No.11002

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)	-2.2000	-2.1000	-2.0100	-2.0010	-2.0001	...	f(2) = NA	...	-11.0002	-11.0020	-11.0200	-11.2000	-11.4000

$\lim_{x \to 2-} f(x) = -2$, , $\lim_{x \to 2+} f(x) = -11$, , $\lim_{x \to 2} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 2"

Ans02 >

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)	2.8000	2.9000	2.9900	2.9990	2.9999	...	f(2) = 3	...	3.0000	3.0000	3.0000	3.0000	3.0000

$\lim_{x \to 2-} f(x) = 3$, , $\lim_{x \to 2+} f(x) = 3$, , $\lim_{x \to 2} f(x) = 3$, , " # f(x) is continuous at x = 2"

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)	7.8000	7.9000	7.9900	7.9990	7.9999	...	f(4) = 6	...	6.0000	6.0000	6.0000	6.0000	6.0000

$\lim_{x \to 4-} f(x) = 8$, , $\lim_{x \to 4+} f(x) = 6$, , $\lim_{x \to 4} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 4"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-6	-10	-10	-10	-10	Continuous
	-3	-7	-7	-7	-7	Continuous
	0	-4	-4	-4	-4	Continuous
	4	-15	-15	-15	-15	Continuous
	2	undefined	-2	-11	DNE	Discontinuous
Ans05	-1	-8	-8	-8	-8	Continuous
	0	-7	-7	-7	-7	Continuous
	6	-18	-18	-18	-18	Continuous
	1	undefined	-6	-8	DNE	Discontinuous
	-2	-9	-9	-9	-9	Continuous
Ans06	-10	2	1	2	DNE	Discontinuous
	-4	2	2	2	2	Continuous
	-2	2	2	2	2	Continuous
	-1	undefined	infinity	1	DNE	Discontinuous
	0	5	2	2	2	Discontinuous

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Limit02_piecewise Answers for No.11188

Ans01 >

x	-2.2000	-2.1000	-2.0100	-2.0010	-2.0001	...	a = -2	...	-1.9999	-1.9990	-1.9900	-1.9000	-1.8000
f(x)	-10.0000	-9.5000	-9.0500	-9.0050	-9.0005	...	f(-2) = 9	...	8.9999	8.9990	8.9900	8.9000	8.8000

$\lim_{x \to (-2)-} f(x) = -9$, , $\lim_{x \to (-2)+} f(x) = 9$, , $\lim_{x \to (-2)} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = -2"

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)	6.0000	6.0000	6.0000	6.0000	6.0000	...	f(3) = 6	...	3.9999	3.9990	3.9900	3.9000	3.8000

$\lim_{x \to 3-} f(x) = 6$, , $\lim_{x \to 3+} f(x) = 4$, , $\lim_{x \to 3} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 3"

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)	5.2000	5.1000	5.0100	5.0010	5.0001	...	f(4) = 5	...	5.0000	5.0000	5.0000	5.0000	5.0000

$\lim_{x \to 4-} f(x) = 5$, , $\lim_{x \to 4+} f(x) = 5$, , $\lim_{x \to 4} f(x) = 5$, , " # f(x) is continuous at x = 4"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-3	-14	-14	-14	-14	Continuous
	0	7	7	7	7	Continuous
	3	4	4	4	4	Continuous
	6	1	1	1	1	Continuous
	-2	9	-9	9	DNE	Discontinuous
Ans05	-1	6	6	6	6	Continuous
	0	1	1	1	1	Continuous
	7	18	18	18	18	Continuous
	1	6	-4	6	DNE	Discontinuous
	-2	11	11	11	11	Continuous
Ans06	-6	1	1	1	1	Continuous
	-5	1	1	infinity	DNE	Discontinuous
	-4	2	2	2	2	Continuous
	1	1	1	1	1	Continuous
	10	0	3	3	3	Discontinuous

Limit02_piecewise Answers for No.11505

Ans01 >

x	0.8000	0.9000	0.9900	0.9990	0.9999	...	a = 1	...	1.0001	1.0010	1.0100	1.1000	1.2000
f(x)	0.4000	-0.3000	-0.9300	-0.9930	-0.9993	...	f(1) = -1	...	10.0006	10.0060	10.0600	10.6000	11.2000

$\lim_{x\to 1-} f(x) = -1$, , $\lim_{x\to 1+} f(x) = 10$, , $\lim_{x\to 1} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 1"

Ans02 >

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)	3.2000	3.1000	3.0100	3.0010	3.0001	...	f(2) = 3	...	3.0000	3.0000	3.0000	3.0000	3.0000

$\lim_{x\to 2-} f(x) = 3$, , $\lim_{x\to 2+} f(x) = 3$, , $\lim_{x\to 2} f(x) = 3$, , " # f(x) is continuous at x = 2"

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)	5.8000	5.9000	5.9900	5.9990	5.9999	...	f(3) = 5	...	5.0000	5.0000	5.0000	5.0000	5.0000

$\lim_{x\to 3-} f(x) = 6$, , $\lim_{x\to 3+} f(x) = 5$, , $\lim_{x\to 3} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 3"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-4	34	34	34	34	Continuous
	-3	27	27	27	27	Continuous
	0	6	6	6	6	Continuous
	6	40	40	40	40	Continuous
	1	-1	-1	10	DNE	Discontinuous
Ans05	-2	12	12	12	12	Continuous
	0	12	12	12	12	Continuous
	2	12	12	12	12	Continuous
	3	-1	12	-1	DNE	Discontinuous
	-5	12	12	12	12	Continuous
Ans06	-9	1	1	1	1	Continuous
	-7	undefined	1	1	1	Discontinuous
	-5	1	1	infinity	DNE	Discontinuous
	0	5	2	2	2	Discontinuous
	1	1	1	1	1	Continuous

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Limit02_piecewise Answers for No.12113

Ans01 >

x	0.8000	0.9000	0.9900	0.9990	0.9999	...	a = 1	...	1.0001	1.0010	1.0100	1.1000	1.2000
f(x)	0.4000	0.7000	0.9700	0.9970	0.9997	...	f(1) = -1	...	-1.0001	-1.0010	-1.0100	-1.1000	-1.2000

$\lim_{x \to 1-} f(x) = 1,\ ,\ \lim_{x \to 1+} f(x) = -1,\ ,\ \lim_{x \to 1} f(x) = \textit{does not exist},\ $, " # f(x) is discontinuous at x = 1"

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)	2.8000	2.9000	2.9900	2.9990	2.9999	...	f(5) = 3	...	4.0000	4.0000	4.0000	4.0000	4.0000

$\lim_{x \to 5-} f(x) = 3,\ ,\ \lim_{x \to 5+} f(x) = 4,\ ,\ \lim_{x \to 5} f(x) = \textit{does not exist},\ $, " # f(x) is discontinuous at x = 5"

Ans03 >

x	6.8000	6.9000	6.9900	6.9990	6.9999	...	a = 7	...	7.0001	7.0010	7.0100	7.1000	7.2000
f(x)	5.0000	5.0000	5.0000	5.0000	5.0000	...	f(7) = 5	...	5.0001	5.0010	5.0100	5.1000	5.2000

$\lim_{x \to 7-} f(x) = 5,\ ,\ \lim_{x \to 7+} f(x) = 5,\ ,\ \lim_{x \to 7} f(x) = 5,\ $, " # f(x) is continuous at x = 7"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-7	-23	-23	-23	-23	Continuous
	-1	-5	-5	-5	-5	Continuous
	0	-2	-2	-2	-2	Continuous
	5	-5	-5	-5	-5	Continuous
	1	-1	1	-1	DNE	Discontinuous
Ans05	-3	-12	-12	-12	-12	Continuous
	0	-4	-4	-4	-4	Continuous
	4	-4	-4	-4	-4	Continuous
	3	undefined	8	-2	DNE	Discontinuous
	-2	-12	-12	-12	-12	Continuous
Ans06	-12	1	1	1	1	Continuous
	-11	3	1	1	1	Discontinuous
	-9	1	1	1	1	Continuous
	0	5	2	2	2	Discontinuous
	6	2	2	2	2	Continuous

Limit02_piecewise Answers for No.12541

```
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)  |  7.6000|  7.8000|  7.9800|  7.9980|  7.9998|...| f( 2) =  NA |...|-11.0006|-11.0060|-11.0600|-11.6000|-12.2000|
```

$\lim_{x \to 2-} f(x) = 8$, , $\lim_{x \to 2+} f(x) = -11$, , $\lim_{x \to 2} f(x) = \textit{does not exist}$, , " # 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)  |  7.0000|  7.0000|  7.0000|  7.0000|  7.0000|...| f( 5) =   7 |...|  7.0001|  7.0010|  7.0100|  7.1000|  7.2000|
```

$\lim_{x \to 5-} f(x) = 7$, , $\lim_{x \to 5+} f(x) = 7$, , $\lim_{x \to 5} f(x) = 7$, , " # 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) =   6 |...|  4.9999|  4.9990|  4.9900|  4.9000|  4.8000|
```

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

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-7	-10	-10	-10	-10	Continuous
	-3	-2	-2	-2	-2	Continuous
	0	4	4	4	4	Continuous
	7	-41	-41	-41	-41	Continuous
	2	undefined	8	-11	DNE	Discontinuous
Ans05	-2	-2	-2	-2	-2	Continuous
	0	-2	-2	-2	-2	Continuous
	6	-27	-27	-27	-27	Continuous
	2	-7	-2	-7	DNE	Discontinuous
	-4	-2	-2	-2	-2	Continuous
Ans06	-11	3	1	1	1	Discontinuous
	-7	undefined	1	1	1	Discontinuous
	1	1	1	1	1	Continuous
	3	undefined	-1	-infinity	DNE	Discontinuous
	4	1	1	1	1	Continuous

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Limit02_piecewise Answers for No.12590

Ans01 >

x	-1.2000	-1.1000	-1.0100	-1.0010	-1.0001	...	a = -1	...	-0.9999	-0.9990	-0.9900	-0.9000	-0.8000
f(x)	-8.2000	-7.6000	-7.0600	-7.0060	-7.0006	...	f(-1) = -7	...	11.9993	11.9930	11.9300	11.3000	10.6000

$$\lim_{x \to (-1)-} f(x) = -7, \quad , \lim_{x \to (-1)+} f(x) = 12, \quad , \lim_{x \to (-1)} f(x) = \textit{does not exist}, \quad , \text{" \# f(x) is discontinuous at x = -1"}$$

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)	9.0000	9.0000	9.0000	9.0000	9.0000	...	f(3) = 9	...	6.9999	6.9990	6.9900	6.9000	6.8000

$$\lim_{x \to 3-} f(x) = 9, \quad , \lim_{x \to 3+} f(x) = 7, \quad , \lim_{x \to 3} f(x) = \textit{does not exist}, \quad , \text{" \# f(x) is discontinuous at x = 3"}$$

Ans03 >

x	7.8000	7.9000	7.9900	7.9990	7.9999	...	a = 8	...	8.0001	8.0010	8.0100	8.1000	8.2000
f(x)	5.0000	5.0000	5.0000	5.0000	5.0000	...	f(8) = 5	...	4.9999	4.9990	4.9900	4.9000	4.8000

$$\lim_{x \to 8-} f(x) = 5, \quad , \lim_{x \to 8+} f(x) = 5, \quad , \lim_{x \to 8} f(x) = 5, \quad , \text{" \# f(x) is continuous at x = 8"}$$

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-7	-43	-43	-43	-43	Continuous
	0	5	5	5	5	Continuous
	4	-23	-23	-23	-23	Continuous
	7	-44	-44	-44	-44	Continuous
	-1	-7	-7	12	DNE	Discontinuous
Ans05	-3	-8	-8	-8	-8	Continuous
	0	-8	-8	-8	-8	Continuous
	3	-8	-8	-8	-8	Continuous
	4	-8	-8	-11	DNE	Discontinuous
	-5	-8	-8	-8	-8	Continuous
Ans06	-8	0	0	0	0	Continuous
	-7	undefined	1	1	1	Discontinuous
	-6	1	1	1	1	Continuous
	8	-1	3	3	3	Discontinuous
	12	4	2	2	2	Discontinuous

Limit02_piecewise Answers for No.12621

Ans01 >

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)	9.8000	9.9000	9.9900	9.9990	9.9999	...	f(3) = 10	...	-18.0004	-18.0040	-18.0400	-18.4000	-18.8000

$\lim_{x\to 3-} f(x) = 10,\ ,\ \lim_{x\to 3+} f(x) = -18,\ ,\ \lim_{x\to 3} f(x) = \textit{does not exist},$," # 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)	8.0000	8.0000	8.0000	8.0000	8.0000	...	f(3) = 8	...	7.0001	7.0010	7.0100	7.1000	7.2000

$\lim_{x\to 3-} f(x) = 8,\ ,\ \lim_{x\to 3+} f(x) = 7,\ ,\ \lim_{x\to 3} f(x) = \textit{does not exist},$," # f(x) is discontinuous at x = 3"

Ans03 >

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)	5.8000	5.9000	5.9900	5.9990	5.9999	...	f(2) = 6	...	6.0000	6.0000	6.0000	6.0000	6.0000

$\lim_{x\to 2-} f(x) = 6,\ ,\ \lim_{x\to 2+} f(x) = 6,\ ,\ \lim_{x\to 2} f(x) = 6,$," # f(x) is continuous at x = 2"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-7	0	0	0	0	Continuous
	-5	2	2	2	2	Continuous
	0	7	7	7	7	Continuous
	7	-34	-34	-34	-34	Continuous
	3	10	10	-18	DNE	Discontinuous
Ans05	-5	32	32	32	32	Continuous
	0	-1	-1	-1	-1	Continuous
	4	2	2	2	2	Continuous
	3	undefined	2	2	2	Discontinuous
	-2	-3	17	-3	DNE	Discontinuous
Ans06	-8	0	0	0	0	Continuous
	-6	1	1	1	1	Continuous
	-5	1	1	infinity	DNE	Discontinuous
	-1	undefined	infinity	1	DNE	Discontinuous
	2	undefined	0	0	0	Discontinuous

Limit02_piecewise Answers for No.12641

Ans01 >

x	0.8000	0.9000	0.9900	0.9990	0.9999	...	a = 1	...	1.0001	1.0010	1.0100	1.1000	1.2000
f(x)	-2.2000	-2.1000	-2.0100	-2.0010	-2.0001	...	f(1) = -13	...	-13.0007	-13.0070	-13.0700	-13.7000	-14.4000

$\lim_{x \to 1-} f(x) = -2$, , $\lim_{x \to 1+} f(x) = -13$, , $\lim_{x \to 1} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 1"

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)	6.8000	6.9000	6.9900	6.9990	6.9999	...	f(3) = 7	...	7.0000	7.0000	7.0000	7.0000	7.0000

$\lim_{x \to 3-} f(x) = 7$, , $\lim_{x \to 3+} f(x) = 7$, , $\lim_{x \to 3} f(x) = 7$, , " # f(x) is continuous at x = 3"

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)	7.8000	7.9000	7.9900	7.9990	7.9999	...	f(3) = 6	...	6.0000	6.0000	6.0000	6.0000	6.0000

$\lim_{x \to 3-} f(x) = 8$, , $\lim_{x \to 3+} f(x) = 6$, , $\lim_{x \to 3} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 3"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-6	-9	-9	-9	-9	Continuous
	-5	-8	-8	-8	-8	Continuous
	0	-3	-3	-3	-3	Continuous
	7	-55	-55	-55	-55	Continuous
	1	-13	-2	-13	DNE	Discontinuous
Ans05	-3	14	14	14	14	Continuous
	0	2	2	2	2	Continuous
	6	-14	-14	-14	-14	Continuous
	4	-14	-14	-14	-14	Continuous
	-4	18	-14	18	DNE	Discontinuous
Ans06	-12	1	1	1	1	Continuous
	-9	1	1	1	1	Continuous
	-4	2	2	2	2	Continuous
	6	2	2	2	2	Continuous
	8	-1	3	3	3	Discontinuous

Limit02_piecewise Answers for No.12674

Ans01 >

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)	15.8000	16.4000	16.9400	16.9940	16.9994	...	f(3) = -10	...	-10.0003	-10.0030	-10.0300	-10.3000	-10.6000

$\lim_{x \to 3-} f(x) = 17,\quad ,\lim_{x \to 3+} f(x) = -10,\quad ,\lim_{x \to 3} f(x) = \textit{does not exist},$, " # 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)	5.0000	5.0000	5.0000	5.0000	5.0000	...	f(5) = 5	...	4.0001	4.0010	4.0100	4.1000	4.2000

$\lim_{x \to 5-} f(x) = 5,\quad ,\lim_{x \to 5+} f(x) = 4,\quad ,\lim_{x \to 5} f(x) = \textit{does not exist},$, " # f(x) is discontinuous at x = 5"

Ans03 >

x	7.8000	7.9000	7.9900	7.9990	7.9999	...	a = 8	...	8.0001	8.0010	8.0100	8.1000	8.2000
f(x)	4.0000	4.0000	4.0000	4.0000	4.0000	...	f(8) = 4	...	3.9999	3.9990	3.9900	3.9000	3.8000

$\lim_{x \to 8-} f(x) = 4,\quad ,\lim_{x \to 8+} f(x) = 4,\quad ,\lim_{x \to 8} f(x) = 4,$, " # f(x) is continuous at x = 8"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-5	-31	-31	-31	-31	Continuous
	-4	-25	-25	-25	-25	Continuous
	0	-1	-1	-1	-1	Continuous
	1	5	5	5	5	Continuous
	3	-10	17	-10	DNE	Discontinuous
Ans05	-4	6	6	6	6	Continuous
	0	-6	-6	-6	-6	Continuous
	7	-12	-12	-12	-12	Continuous
	2	undefined	-12	-12	-12	Discontinuous
	-5	-15	-15	9	DNE	Discontinuous
Ans06	-7	undefined	1	1	1	Discontinuous
	-1	undefined	infinity	1	DNE	Discontinuous
	6	2	2	2	2	Continuous
	9	undefined	infinity	infinity	infinity	Discontinuous
	10	0	3	3	3	Discontinuous

Limit02_piecewise Answers for No.12728

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)	12.0000	12.5000	12.9500	12.9950	12.9995	...	f(2) = NA	...	1.9998	1.9980	1.9800	1.8000	1.6000

$$\lim_{x \to 2-} f(x) = 13, \quad , \lim_{x \to 2+} f(x) = 2, \quad , \lim_{x \to 2} f(x) = \textit{does not exist}, \quad , \text{" \# f(x) is discontinuous at x = 2"}$$

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)	7.0000	7.0000	7.0000	7.0000	7.0000	...	f(4) = 7	...	7.0001	7.0010	7.0100	7.1000	7.2000

$$\lim_{x \to 4-} f(x) = 7, \quad , \lim_{x \to 4+} f(x) = 7, \quad , \lim_{x \to 4} f(x) = 7, \quad , \text{" \# f(x) is continuous at x = 4"}$$

Ans03 >

x	7.8000	7.9000	7.9900	7.9990	7.9999	...	a = 8	...	8.0001	8.0010	8.0100	8.1000	8.2000
f(x)	5.0000	5.0000	5.0000	5.0000	5.0000	...	f(8) = 5	...	3.9999	3.9990	3.9900	3.9000	3.8000

$$\lim_{x \to 8-} f(x) = 5, \quad , \lim_{x \to 8+} f(x) = 4, \quad , \lim_{x \to 8} f(x) = \textit{does not exist}, \quad , \text{" \# f(x) is discontinuous at x = 8"}$$

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-7	-32	-32	-32	-32	Continuous
	-5	-22	-22	-22	-22	Continuous
	0	3	3	3	3	Continuous
	5	-4	-4	-4	-4	Continuous
	2	undefined	13	2	DNE	Discontinuous
Ans05	-1	-2	-2	-2	-2	Continuous
	0	2	2	2	2	Continuous
	2	10	10	10	10	Continuous
	5	-19	22	-19	DNE	Discontinuous
	-2	undefined	-6	-6	-6	Discontinuous
Ans06	-11	3	1	1	1	Discontinuous
	-6	1	1	1	1	Continuous
	-1	undefined	infinity	1	DNE	Discontinuous
	2	undefined	0	0	0	Discontinuous
	4	1	1	1	1	Continuous

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Limit02_piecewise Answers for No.14247

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)	-7.4000	-7.7000	-7.9700	-7.9970	-7.9997	...	f(2) = NA	...	3.0004	3.0040	3.0400	3.4000	3.8000

$\lim_{x \to 2-} f(x) = -8$, , $\lim_{x \to 2+} f(x) = 3$, , $\lim_{x \to 2} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 2"

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	...	3.9999	3.9990	3.9900	3.9000	3.8000

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

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)	2.8000	2.9000	2.9900	2.9990	2.9999	...	f(4) = 3	...	6.0000	6.0000	6.0000	6.0000	6.0000

$\lim_{x \to 4-} f(x) = 3$, , $\lim_{x \to 4+} f(x) = 6$, , $\lim_{x \to 4} f(x) =$ *does not exist*, , " # f(x) is discontinuous at x = 4"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans04	-7	19	19	19	19	Continuous
	-2	4	4	4	4	Continuous
	0	-2	-2	-2	-2	Continuous
	3	7	7	7	7	Continuous
	2	undefined	-8	3	DNE	Discontinuous
Ans05	-2	5	5	5	5	Continuous
	0	1	1	1	1	Continuous
	7	14	14	14	14	Continuous
	4	-15	-15	5	DNE	Discontinuous
	-1	5	5	5	5	Continuous
Ans06	-10	2	1	2	DNE	Discontinuous
	-4	2	2	2	2	Continuous
	1	1	1	1	1	Continuous
	2	undefined	0	0	0	Discontinuous
	8	-1	3	3	3	Discontinuous

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