LimitExercise01 Answers for No.8765

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)	-6.2000	-6.1000	-6.0100	-6.0010	-6.0001	...	f(1) = undefined	...	-5.9999	-5.9990	-5.9900	-5.9000	-5.8000

$$\lim_{x \to 1-} f(x) = -6.0000, \quad , \lim_{x \to 1+} f(x) = -6.0000, \quad , \lim_{x \to 1} f(x) = -6.0000, \quad , \text{" \# f(x) is discontinuous at x = 1"}$$

Ans02 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-1.2500	-1.1111	-1.0101	-1.0010	-1.0001	...	f(0) = undefined	...	0.9999	0.9990	0.9901	0.9091	0.8333

$$\lim_{x \to 0-} f(x) = -1.0000, \quad , \lim_{x \to 0+} f(x) = 1.0000, \quad , \lim_{x \to 0} f(x) = \textit{does not exist}, \quad , \text{" \# f(x) is discontinuous at x = 0"}$$

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)	0.2532	0.2516	0.2502	0.2500	0.2500	...	f(4) = undefined	...	0.2500	0.2500	0.2498	0.2485	0.2470

$$\lim_{x \to 4-} f(x) = 0.2500, \quad , \lim_{x \to 4+} f(x) = 0.2500, \quad , \lim_{x \to 4} f(x) = 0.2500, \quad , \text{" \# f(x) is discontinuous at x = 4"}$$

Ans04 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	0.9933	0.9983	1.0000	1.0000	1.0000	...	f(0) = undefined	...	1.0000	1.0000	1.0000	0.9983	0.9933

$$\lim_{x \to 0-} f(x) = 1.0000, \quad , \lim_{x \to 0+} f(x) = 1.0000, \quad , \lim_{x \to 0} f(x) = 1.0000, \quad , \text{" \# f(x) is discontinuous at x = 0"}$$

Ans05 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	6.3444	6.6614	6.9651	6.9965	6.9996	...	f(0) = undefined	...	7.0004	7.0035	7.0351	7.3620	7.7491

$$\lim_{x \to 0-} f(x) = 7.0000, \quad , \lim_{x \to 0+} f(x) = 7.0000, \quad , \lim_{x \to 0} f(x) = 7.0000, \quad , \text{" \# f(x) is discontinuous at x = 0"}$$

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	-12	4	4	4	4	Continuous
	-11	-2	3	4	DNE	Discontinuous
	-10	4	4	4	4	Continuous
	3	3	4	4	4	Discontinuous
	4	3	4	4	4	Discontinuous

LimitExercise01 Answers for No.8767

Ans01 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-1.8000	-1.9000	-1.9900	-1.9990	-1.9999	...	f(0) = undefined	...	2.0001	2.0010	2.0100	2.1000	2.2000

$\lim\limits_{x \to 0-} f(x) = -2.0000$, , $\lim\limits_{x \to 0+} f(x) = 2.0000$, , $\lim\limits_{x \to 0} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 0"

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)	0.1136	0.1124	0.1112	0.1111	0.1111	...	f(2) = undefined	...	0.1111	0.1111	0.1110	0.1099	0.1087

$\lim\limits_{x \to 2-} f(x) = 0.1111$, , $\lim\limits_{x \to 2+} f(x) = 0.1111$, , $\lim\limits_{x \to 2} f(x) = 0.1111$, , " # f(x) is discontinuous at x = 2"

Ans03 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	4.4133	4.2033	4.0200	4.0020	4.0002	...	f(0) = undefined	...	3.9998	3.9980	3.9800	3.8033	3.6133

$\lim\limits_{x \to 0-} f(x) = 4.0000$, , $\lim\limits_{x \to 0+} f(x) = 4.0000$, , $\lim\limits_{x \to 0} f(x) = 4.0000$, , " # f(x) is discontinuous at x = 0"

Ans04 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	0.0997	0.0500	0.0050	0.0005	0.0000	...	f(0) = undefined	...	-0.0000	-0.0005	-0.0050	-0.0500	-0.0997

$\lim\limits_{x \to 0-} f(x) = 0$, , $\lim\limits_{x \to 0+} f(x) = 0$, , $\lim\limits_{x \to 0} f(x) = 0$, , " # f(x) is discontinuous at x = 0"

Ans05 >

x	8.8000	8.9000	8.9900	8.9990	8.9999	...	a = 9	...	9.0001	9.0010	9.0100	9.1000	9.2000
f(x)	0.1676	0.1671	0.1667	0.1667	0.1667	...	f(9) = undefined	...	0.1667	0.1667	0.1666	0.1662	0.1658

$\lim\limits_{x \to 9-} f(x) = 0.1667$, , $\lim\limits_{x \to 9+} f(x) = 0.1667$, , $\lim\limits_{x \to 9} f(x) = 0.1667$, , " # f(x) is discontinuous at x = 9"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	-4	undefined	3	3	3	Discontinuous
	-1	0	2	2	2	Discontinuous
	0	2	2	2	2	Continuous
	5	3	3	3	3	Continuous
	12	4	4	4	4	Continuous

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LimitExercise01 Answers for No.8768

Ans01 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-0.0997	-0.0500	-0.0050	-0.0005	-0.0000	...	f(0) = undefined	...	0.0000	0.0005	0.0050	0.0500	0.0997

$\lim_{x \to 0-} f(x) = 0$, , $\lim_{x \to 0+} f(x) = 0$, , $\lim_{x \to 0} f(x) = 0$, , " # f(x) is discontinuous at x = 0"

Ans02 >

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)	2.8000	2.9000	2.9900	2.9990	2.9999	...	f(7) = undefined	...	3.0001	3.0010	3.0100	3.1000	3.2000

$\lim_{x \to 7-} f(x) = 3.0000$, , $\lim_{x \to 7+} f(x) = 3.0000$, , $\lim_{x \to 7} f(x) = 3.0000$, , " # f(x) is discontinuous at x = 7"

Ans03 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	0.9063	0.9516	0.9950	0.9995	1.0000	...	f(0) = undefined	...	1.0000	1.0005	1.0050	1.0517	1.1070

$\lim_{x \to 0-} f(x) = 1.0000$, , $\lim_{x \to 0+} f(x) = 1.0000$, , $\lim_{x \to 0} f(x) = 1.0000$, , " # f(x) is discontinuous at x = 0"

Ans04 >

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)	3.9494	3.9748	3.9975	3.9997	4.0000	...	f(4) = undefined	...	4.0000	4.0003	4.0025	4.0248	4.0494

$\lim_{x \to 4-} f(x) = 4.0000$, , $\lim_{x \to 4+} f(x) = 4.0000$, , $\lim_{x \to 4} f(x) = 4.0000$, , " # f(x) is discontinuous at x = 4"

Ans05 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-1.0714	-1.0345	-1.0033	-1.0003	-1.0000	...	f(0) = undefined	...	1.0000	0.9997	0.9967	0.9677	0.9375

$\lim_{x \to 0-} f(x) = -1.0000$, , $\lim_{x \to 0+} f(x) = 1.0000$, , $\lim_{x \to 0} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 0"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	-9	4	4	-infinity	DNE	Discontinuous
	-4	undefined	3	3	3	Discontinuous
	2	3	3	3	3	Continuous
	3	3	4	4	4	Discontinuous
	6	undefined	2	2	2	Discontinuous

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LimitExercise01 Answers for No.8779

Ans01 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	1.1033	1.0508	1.0050	1.0005	1.0001	...	f(0) = undefined	...	1.0000	0.9995	0.9950	0.9508	0.9033

$\lim_{x \to 0-} f(x) = 1.0000$, , $\lim_{x \to 0+} f(x) = 1.0000$, , $\lim_{x \to 0} f(x) = 1.0000$, , " # f(x) is discontinuous at x = 0"

Ans02 >

x	35.8000	35.9000	35.9900	35.9990	35.9999	...	a = 36	...	36.0001	36.0010	36.0100	36.1000	36.2000
f(x)	-11.9833	-11.9917	-11.9992	-11.9999	-12.0005	...	f(36) = undefined	...	-12.0005	-12.0000	-12.0008	-12.0083	-12.0166

$\lim_{x \to 36-} f(x) = -12.0000$, , $\lim_{x \to 36+} f(x) = -12.0000$, , $\lim_{x \to 36} f(x) = -12.0000$, , " # f(x) is discontinuous at x = 36"

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)	0.1282	0.1266	0.1252	0.1250	0.1250	...	f(5) = undefined	...	0.1250	0.1250	0.1248	0.1235	0.1220

$\lim_{x \to 5-} f(x) = 0.1250$, , $\lim_{x \to 5+} f(x) = 0.1250$, , $\lim_{x \to 5} f(x) = 0.1250$, , " # f(x) is discontinuous at x = 5"

Ans04 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	1.0067	1.0017	1.0000	1.0000	1.0000	...	f(0) = undefined	...	1.0000	1.0000	1.0000	1.0017	1.0067

$\lim_{x \to 0-} f(x) = 1.0000$, , $\lim_{x \to 0+} f(x) = 1.0000$, , $\lim_{x \to 0} f(x) = 1.0000$, , " # f(x) is discontinuous at x = 0"

Ans05 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-0.8000	-0.9000	-0.9900	-0.9990	-0.9999	...	f(0) = undefined	...	1.0001	1.0010	1.0100	1.1000	1.2000

$\lim_{x \to 0-} f(x) = -1.0000$, , $\lim_{x \to 0+} f(x) = 1.0000$, , $\lim_{x \to 0} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 0"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	0	2	2	2	2	Continuous
	1	2	2	2	2	Continuous
	2	3	3	3	3	Continuous
	4	3	4	4	4	Discontinuous
	8	2	2	2	2	Continuous

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LimitExercise01 Answers for No.9404

Ans01 >

x	63.8000	63.9000	63.9900	63.9990	63.9999	...	a = 64	...	64.0001	64.0010	64.0100	64.1000	64.2000
f(x)	-0.0625	-0.0625	-0.0625	-0.0625	-0.0625	...	f(64) = undefined	...	-0.0625	-0.0625	-0.0625	-0.0625	-0.0625

$\lim_{x \to 64-} f(x) = -0.0625,$, $\lim_{x \to 64+} f(x) = -0.0625,$, $\lim_{x \to 64} f(x) = -0.0625,$, " # f(x) is discontinuous at x = 64"

Ans02 >

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)	0.2083	0.2041	0.2004	0.2000	0.2000	...	f(1) = undefined	...	0.2000	0.2000	0.1996	0.1961	0.1923

$\lim_{x \to 1-} f(x) = 0.2000,$, $\lim_{x \to 1+} f(x) = 0.2000,$, $\lim_{x \to 1} f(x) = 0.2000,$, " # f(x) is discontinuous at x = 1"

Ans03 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	0.9933	0.9983	1.0000	1.0000	1.0000	...	f(0) = undefined	...	1.0000	1.0000	1.0000	0.9983	0.9933

$\lim_{x \to 0-} f(x) = 1.0000,$, $\lim_{x \to 0+} f(x) = 1.0000,$, $\lim_{x \to 0} f(x) = 1.0000,$, " # f(x) is discontinuous at x = 0"

Ans04 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-0.8000	-0.9000	-0.9900	-0.9990	-0.9999	...	f(0) = undefined	...	1.0001	1.0010	1.0100	1.1000	1.2000

$\lim_{x \to 0-} f(x) = -1.0000,$, $\lim_{x \to 0+} f(x) = 1.0000,$, $\lim_{x \to 0} f(x) = \textit{does not exist},$, " # f(x) is discontinuous at x = 0"

Ans05 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	5.4381	5.7098	5.9701	5.9970	5.9997	...	f(0) = undefined	...	6.0003	6.0030	6.0301	6.3103	6.6421

$\lim_{x \to 0-} f(x) = 6.0000,$, $\lim_{x \to 0+} f(x) = 6.0000,$, $\lim_{x \to 0} f(x) = 6.0000,$, " # f(x) is discontinuous at x = 0"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	-4	undefined	3	3	3	Discontinuous
	4	3	4	4	4	Discontinuous
	6	undefined	2	2	2	Discontinuous
	8	2	2	2	2	Continuous
	12	4	4	4	4	Continuous

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LimitExercise01 Answers for No.9440

Ans01 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-1.8000	-1.9000	-1.9900	-1.9990	-1.9999	...	f(0) = undefined	...	2.0001	2.0010	2.0100	2.1000	2.2000

$\lim_{x\to 0-} f(x) = -2.0000$, , $\lim_{x\to 0+} f(x) = 2.0000$, , $\lim_{x\to 0} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 0"

Ans02 >

x	35.8000	35.9000	35.9900	35.9990	35.9999	...	a = 36	...	36.0001	36.0010	36.0100	36.1000	36.2000
f(x)	0.0834	0.0834	0.0833	0.0833	0.0833	...	f(36) = undefined	...	0.0833	0.0833	0.0833	0.0833	0.0832

$\lim_{x\to 36-} f(x) = 0.0833$, , $\lim_{x\to 36+} f(x) = 0.0833$, , $\lim_{x\to 36} f(x) = 0.0833$, , " # f(x) is discontinuous at x = 36"

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)	-0.8333	-0.9091	-0.9901	-0.9990	-0.9999	...	f(6) = undefined	...	-1.0001	-1.0010	-1.0101	-1.1111	-1.2500

$\lim_{x\to 6-} f(x) = -1.0000$, , $\lim_{x\to 6+} f(x) = -1.0000$, , $\lim_{x\to 6} f(x) = -1.0000$, , " # f(x) is discontinuous at x = 6"

Ans04 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-0.0997	-0.0500	-0.0050	-0.0005	-0.0000	...	f(0) = undefined	...	0.0000	0.0005	0.0050	0.0500	0.0997

$\lim_{x\to 0-} f(x) = 0$, , $\lim_{x\to 0+} f(x) = 0$, , $\lim_{x\to 0} f(x) = 0$, , " # f(x) is discontinuous at x = 0"

Ans05 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-2.2067	-2.1017	-2.0100	-2.0010	-2.0001	...	f(0) = undefined	...	-1.9999	-1.9990	-1.9900	-1.9017	-1.8067

$\lim_{x\to 0-} f(x) = -2.0000$, , $\lim_{x\to 0+} f(x) = -2.0000$, , $\lim_{x\to 0} f(x) = -2.0000$, , " # f(x) is discontinuous at x = 0"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	-1	0	2	2	2	Discontinuous
	5	3	3	3	3	Continuous
	8	2	2	2	2	Continuous
	9	5	5	5	5	Continuous
	12	4	4	4	4	Continuous

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LimitExercise01 Answers for No.9474

Ans01 >

x	35.8000	35.9000	35.9900	35.9990	35.9999	...	a = 36	...	36.0001	36.0010	36.0100	36.1000	36.2000
f(x)	11.9833	11.9917	11.9992	11.9999	12.0005	...	f(36) = undefined	...	12.0005	12.0000	12.0008	12.0083	12.0166

$\lim_{x \to 36-} f(x) = 12.0000$, , $\lim_{x \to 36+} f(x) = 12.0000$, , $\lim_{x \to 36} f(x) = 12.0000$, , " # f(x) is discontinuous at x = 36"

Ans02 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-2.5000	-2.2222	-2.0202	-2.0020	-2.0002	...	f(0) = undefined	...	1.9998	1.9980	1.9802	1.8182	1.6667

$\lim_{x \to 0-} f(x) = -2.0000$, , $\lim_{x \to 0+} f(x) = 2.0000$, , $\lim_{x \to 0} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 0"

Ans03 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	0.0997	0.0500	0.0050	0.0005	0.0000	...	f(0) = undefined	...	-0.0000	-0.0005	-0.0050	-0.0500	-0.0997

$\lim_{x \to 0-} f(x) = 0$, , $\lim_{x \to 0+} f(x) = 0$, , $\lim_{x \to 0} f(x) = 0$, , " # f(x) is discontinuous at x = 0"

Ans04 >

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)	9.8000	9.9000	9.9900	9.9990	9.9999	...	f(6) = undefined	...	10.0001	10.0010	10.0100	10.1000	10.2000

$\lim_{x \to 6-} f(x) = 10.0000$, , $\lim_{x \to 6+} f(x) = 10.0000$, , $\lim_{x \to 6} f(x) = 10.0000$, , " # f(x) is discontinuous at x = 6"

Ans05 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	4.5317	4.7581	4.9751	4.9975	4.9998	...	f(0) = undefined	...	5.0002	5.0025	5.0251	5.2585	5.5351

$\lim_{x \to 0-} f(x) = 5.0000$, , $\lim_{x \to 0+} f(x) = 5.0000$, , $\lim_{x \to 0} f(x) = 5.0000$, , " # f(x) is discontinuous at x = 0"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	-2	3	3	3	3	Continuous
	-1	0	2	2	2	Discontinuous
	1	2	2	2	2	Continuous
	10	3	3	3	3	Continuous
	11	undefined	-infinity	-infinity	-infinity	Discontinuous

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LimitExercise01 Answers for No.9607

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) |  2.8000|  2.9000|  2.9900|  2.9990|  2.9999|...|f( 2) = undefined|...|  3.0001|  3.0010|  3.0100|  3.1000|  3.2000|
```

$\lim_{x\to 2-} f(x) = 3.0000$, , $\lim_{x\to 2+} f(x) = 3.0000$, , $\lim_{x\to 2} f(x) = 3.0000$, , " # f(x) is discontinuous at x = 2"

Ans02 >

```
   x |  8.8000|  8.9000|  8.9900|  8.9990|  8.9999|...|   a =  9        |...|  9.0001|  9.0010|  9.0100|  9.1000|  9.2000|
f(x) | -0.1676| -0.1671| -0.1667| -0.1667| -0.1667|...|f( 9) = undefined|...| -0.1667| -0.1667| -0.1666| -0.1662| -0.1658|
```

$\lim_{x\to 9-} f(x) = -0.1667$, , $\lim_{x\to 9+} f(x) = -0.1667$, , $\lim_{x\to 9} f(x) = -0.1667$, , " # f(x) is discontinuous at x = 9"

Ans03 >

```
   x | -0.2000| -0.1000| -0.0100| -0.0010| -0.0001|...|   a =  0        |...|  0.0001|  0.0010|  0.0100|  0.1000|  0.2000|
f(x) | -0.0997| -0.0500| -0.0050| -0.0005| -0.0000|...|f( 0) = undefined|...|  0.0000|  0.0005|  0.0050|  0.0500|  0.0997|
```

$\lim_{x\to 0-} f(x) = 0$, , $\lim_{x\to 0+} f(x) = 0$, , $\lim_{x\to 0} f(x) = 0$, , " # f(x) is discontinuous at x = 0"

Ans04 >

```
   x | -0.2000| -0.1000| -0.0100| -0.0010| -0.0001|...|   a =  0        |...|  0.0001|  0.0010|  0.0100|  0.1000|  0.2000|
f(x) | -2.8000| -2.9000| -2.9900| -2.9990| -2.9999|...|f( 0) = undefined|...|  3.0001|  3.0010|  3.0100|  3.1000|  3.2000|
```

$\lim_{x\to 0-} f(x) = -3.0000$, , $\lim_{x\to 0+} f(x) = 3.0000$, , $\lim_{x\to 0} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 0"

Ans05 >

```
   x | -0.2000| -0.1000| -0.0100| -0.0010| -0.0001|...|   a =  0        |...|  0.0001|  0.0010|  0.0100|  0.1000|  0.2000|
f(x) |  2.2067|  2.1017|  2.0100|  2.0010|  2.0001|...|f( 0) = undefined|...|  1.9999|  1.9990|  1.9900|  1.9017|  1.8067|
```

$\lim_{x\to 0-} f(x) = 2.0000$, , $\lim_{x\to 0+} f(x) = 2.0000$, , $\lim_{x\to 0} f(x) = 2.0000$, , " # f(x) is discontinuous at x = 0"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	-9	4	4	-infinity	DNE	Discontinuous
	-8	3	3	3	3	Continuous
	-6	5	3	3	3	Discontinuous
	-1	0	2	2	2	Discontinuous
	2	3	3	3	3	Continuous

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LimitExercise01 Answers for No.9965

Ans01 >

x	8.8000	8.9000	8.9900	8.9990	8.9999	...	a = 9	...	9.0001	9.0010	9.0100	9.1000	9.2000
f(x)	-5.9665	-5.9833	-5.9983	-5.9998	-5.9999	...	f(9) = undefined	...	-5.9999	-6.0002	-6.0017	-6.0166	-6.0332

$\lim_{x \to 9-} f(x) = -6.0000,\quad , \lim_{x \to 9+} f(x) = -6.0000,\quad , \lim_{x \to 9} f(x) = -6.0000,$, " # f(x) is discontinuous at x = 9"

Ans02 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-1.8000	-1.9000	-1.9900	-1.9990	-1.9999	...	f(0) = undefined	...	2.0001	2.0010	2.0100	2.1000	2.2000

$\lim_{x \to 0-} f(x) = -2.0000,\quad , \lim_{x \to 0+} f(x) = 2.0000,\quad , \lim_{x \to 0} f(x) = \textit{does not exist},$, " # f(x) is discontinuous at x = 0"

Ans03 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	5.5167	5.2542	5.0250	5.0025	5.0003	...	f(0) = undefined	...	4.9998	4.9975	4.9750	4.7542	4.5167

$\lim_{x \to 0-} f(x) = 5.0000,\quad , \lim_{x \to 0+} f(x) = 5.0000,\quad , \lim_{x \to 0} f(x) = 5.0000,$, " # f(x) is discontinuous at x = 0"

Ans04 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	1.0067	1.0017	1.0000	1.0000	1.0000	...	f(0) = undefined	...	1.0000	1.0000	1.0000	1.0017	1.0067

$\lim_{x \to 0-} f(x) = 1.0000,\quad , \lim_{x \to 0+} f(x) = 1.0000,\quad , \lim_{x \to 0} f(x) = 1.0000,$, " # f(x) is discontinuous at x = 0"

Ans05 >

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)	-0.4545	-0.4762	-0.4975	-0.4998	-0.5000	...	f(4) = undefined	...	-0.5000	-0.5003	-0.5025	-0.5263	-0.5556

$\lim_{x \to 4-} f(x) = -0.5000,\quad , \lim_{x \to 4+} f(x) = -0.5000,\quad , \lim_{x \to 4} f(x) = -0.5000,$, " # f(x) is discontinuous at x = 4"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	-10	4	4	4	4	Continuous
	-8	3	3	3	3	Continuous
	4	3	4	4	4	Discontinuous
	7	1	1	1	1	Continuous
	9	5	5	5	5	Continuous

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LimitExercise01 Answers for No.10186

Ans01 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-5.4381	-5.7098	-5.9701	-5.9970	-5.9997	...	f(0) = undefined	...	-6.0003	-6.0030	-6.0301	-6.3103	-6.6421

$\lim_{x \to 0-} f(x) = -6.0000$, , $\lim_{x \to 0+} f(x) = -6.0000$, , $\lim_{x \to 0} f(x) = -6.0000$, , " # f(x) is discontinuous at x = 0"

Ans02 >

x	15.8000	15.9000	15.9900	15.9990	15.9999	...	a = 16	...	16.0001	16.0010	16.0100	16.1000	16.2000
f(x)	-0.1254	-0.1252	-0.1250	-0.1250	-0.1250	...	f(16) = undefined	...	-0.1250	-0.1250	-0.1250	-0.1248	-0.1246

$\lim_{x \to 16-} f(x) = -0.1250$, , $\lim_{x \to 16+} f(x) = -0.1250$, , $\lim_{x \to 16} f(x) = -0.1250$, , " # f(x) is discontinuous at x = 16"

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)	0.2632	0.2564	0.2506	0.2501	0.2500	...	f(6) = undefined	...	0.2500	0.2499	0.2494	0.2439	0.2381

$\lim_{x \to 6-} f(x) = 0.2500$, , $\lim_{x \to 6+} f(x) = 0.2500$, , $\lim_{x \to 6} f(x) = 0.2500$, , " # f(x) is discontinuous at x = 6"

Ans04 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	-2.2222	-2.1053	-2.0101	-2.0010	-2.0001	...	f(0) = undefined	...	1.9999	1.9990	1.9900	1.9048	1.8182

$\lim_{x \to 0-} f(x) = -2.0000$, , $\lim_{x \to 0+} f(x) = 2.0000$, , $\lim_{x \to 0} f(x) = \textit{does not exist}$, , " # f(x) is discontinuous at x = 0"

Ans05 >

x	-0.2000	-0.1000	-0.0100	-0.0010	-0.0001	...	a = 0	...	0.0001	0.0010	0.0100	0.1000	0.2000
f(x)	0.9933	0.9983	1.0000	1.0000	1.0000	...	f(0) = undefined	...	1.0000	1.0000	1.0000	0.9983	0.9933

$\lim_{x \to 0-} f(x) = 1.0000$, , $\lim_{x \to 0+} f(x) = 1.0000$, , $\lim_{x \to 0} f(x) = 1.0000$, , " # f(x) is discontinuous at x = 0"

	a	f(a)	LH-Limit	RH-Limit	Limit	Continuity
Ans06	-10	4	4	4	4	Continuous
	-6	5	3	3	3	Discontinuous
	0	2	2	2	2	Continuous
	5	3	3	3	3	Continuous
	7	1	1	1	1	Continuous

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