Continuity

Name _____ **Date** _____

Decide whether each function is continuous at the breakpoint. If not, name the type.

Problem	Answer	Problem	Answer
1. $f(x) = x + 1$ if $x < 2$; 3 if $x \geq 2$ (at $x = 2$)		4. $f(x) = \lvert x \rvert$ written as $-x$ if $x < 0$; x if $x \geq 0$ (at $x = 0$)	
2. $f(x) = x^2$ if $x < 1$; 2 if $x \geq 1$ (at $x = 1$)		5. $f(x) = 4 - x$ if $x \leq 1$; $x + 2$ if $x > 1$ (at $x = 1$)	
3. $f(x) = 2x$ if $x \neq 3$; 0 if $x = 3$ (at $x = 3$)		6. $f(x) = 1$ if $x < 0$; -1 if $x \geq 0$ (at $x = 0$)	

Notes

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Answer key — Continuity

#	Problem	Answer
1	f(x) = x + 1 if x < 2; 3 if x ≥ 2 (at x = 2)	Continuous
2	f(x) = x² if x < 1; 2 if x ≥ 1 (at x = 1)	Jump
3	f(x) = 2x if x ≠ 3; 0 if x = 3 (at x = 3)	Removable
4	f(x) = |x| written as −x if x < 0; x if x ≥ 0 (at x = 0)	Continuous
5	f(x) = 4 − x if x ≤ 1; x + 2 if x > 1 (at x = 1)	Continuous
6	f(x) = 1 if x < 0; −1 if x ≥ 0 (at x = 0)	Jump

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