Who did this!?!? Key Period:_____

AP Calculus AB: 2.7 Continuity with Variables

Find the values of k that will make the functions below continuous.

1. $f(x) = \begin{cases} kx^2 - 4x, & x \leq -1 \\ x, & x > -1 \end{cases}$

$k = -5$

2. $f(x) = \begin{cases} k^2 + 6, & x = 2 \\ 11x, & x \neq 2 \end{cases}$

$k = \pm 4$

3. $f(x) = \begin{cases} k^2x + 2k, & x = 1 \\ 8x, & x \neq 1 \end{cases}$

$k = -4$ or $k = 2$

4. . $f(x) = \begin{cases} k^2 - kx, & x \leq -2 \\ -k + x, & x > -2 \end{cases}$

$k = -1$ or $k = -2$

5. $f(x) = \begin{cases} -2e^x, & x < \ln(k) \\ e^x + 1, & x \geq \ln(k) \end{cases}$

$k = -1/3$

6. $f(x) = \begin{cases} \frac{\sqrt{x+3}}{x-3}, & x = 6 \\ k, & x \neq 6 \end{cases}$

$k = 1$

7. Solve for the k-value that make the following piecewise function continuous then check its continuity using the 3-rules of continuity. $f(x) = \begin{cases} -x, & x < 1 \\ 3k + ln(x), & x \geq 1 \end{cases}$

$k = -1/3$