Name: Key
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MAC 1105.1A26
Cyr

Quiz 6
You must show all work to receive full credit!!

Problem 1. (1 pt) Solve the inequality $2x^2 - 9x - 5 < 0$ and write your answer in interval notation.

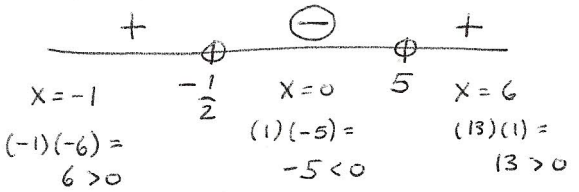
$(2x+1)(x-5) = 0$

$\Rightarrow 2x+1=0$ or $x-5=0$

$\Rightarrow x = -\frac{1}{2}$ or $x = 5$

Exclude from solution set since inequality is strict

since we want < 0



$\left(-\frac{1}{2}, 5\right)$

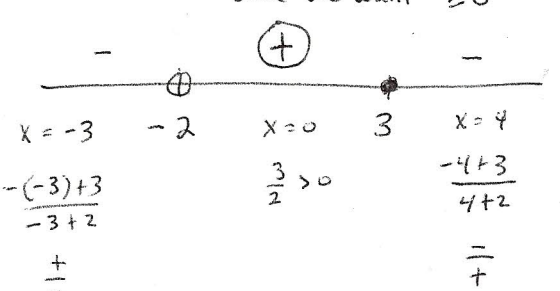
Problem 2. (2 pts) Solve the inequality $\frac{1-2x}{x+2} \geq -1$ and write your answer in interval notation.

$\frac{1-2x}{x+2} + 1 \geq 0$

$\frac{1-2x+x+2}{x+2} \geq 0$

$\frac{-x+3}{x+2} \geq 0$

since we want ≥ 0



$(-2, 3]$

Num: $-x+3=0 \Rightarrow x=3$
include since $=0$ is OK

Den: $x+2=0 \Rightarrow x=-2$
exclude (can't div by 0)

Problem 3. (2 pts) Solve the inequality $|2x+5| \geq 3$ and write your answer in interval notation.

$2x+5 \geq 3$ or $2x+5 \leq -3$

$2x \geq -2$ $2x \leq -8$

$x \geq -1$ $x \leq -4$

$(-\infty, -4] \cup [-1, \infty)$