MPS21XH - Inequalities Problem Set
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The answers to all inequality problems **must** be written using interval notation.

1.) Solve $(x-2)^2(x-3)^5(x+1) \leq 0$.

2.) Solve $\frac{x^3-1}{x^2+5x-14} > 0$.

3.) Solve for all real values of x: $|\frac{2x-9}{x+1}| = 8$.

4.) Find all solutions to $|x|^2 - 5|x| - 14 = 0$

5.) Solve $|x^2 - 3x - 7| = 3$

For 6-10, it helps to rewrite each inequality without the absolute value, as shown in class.

6.) Solve $7|x+4| - 5 \leq 30$

7.) Solve $6 - |x+3| - |x-2| < 0$

8.) Solve $|3x+4| - |x-3| \geq 5$

9.) Solve $||3x-5| - 7| > 6$ - it helps to first solve the equation $||3x-5| - 7| = 6$ first, as we did in class the other day.

10.) Solve $|x+1| \geq x^2 - 4x - 5$ - you can include a sketch of the graph to help with this problem.