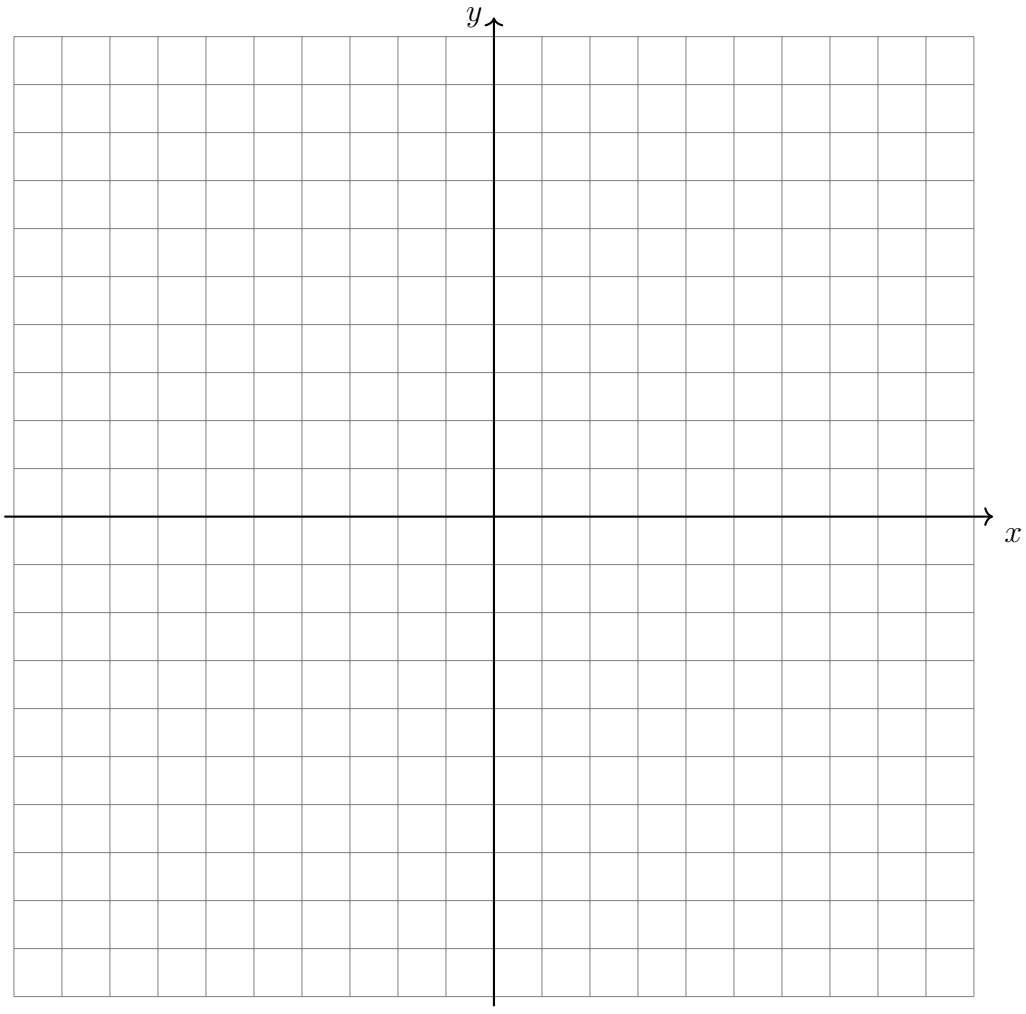
BECA / Dr. Huson / Regents Prep: Graphs First and last name:
26 November 2024 Section:

3.9 Do Now: Graphing 3rd order polynomials

1. Graph the cubic function $f(x) = x^3 + 5x^2 + 3x - 9$ on the grid below.
   (a) Mark and label the x-intercepts.
   (b) Write the function in factored form.
   (c) Characterize the end behavior of the function. Use the notation "as $x \to \pm\infty$ $y \to \pm\infty$"
   (d) Over the interval $-3 < x < -1$, is the function increasing or decreasing?



2. In the following problems, solve for the value of x, then check your answer.

   (a) $\frac{1}{4}(x-8)=2$

   (b) $\frac{1}{5}x-3=-1$

   (c) $\frac{3}{4}(x+2)=x-1$

   (d) $\dfrac{3}{7x}=6$

3. Factor each equation and solve for the values of x.

   (a) $x^2-9x+14=0$

   (b) $x^2+14x+49=0$

4. Solve $1=\dfrac{1}{x^2+2x}+\dfrac{x-1}{x}$