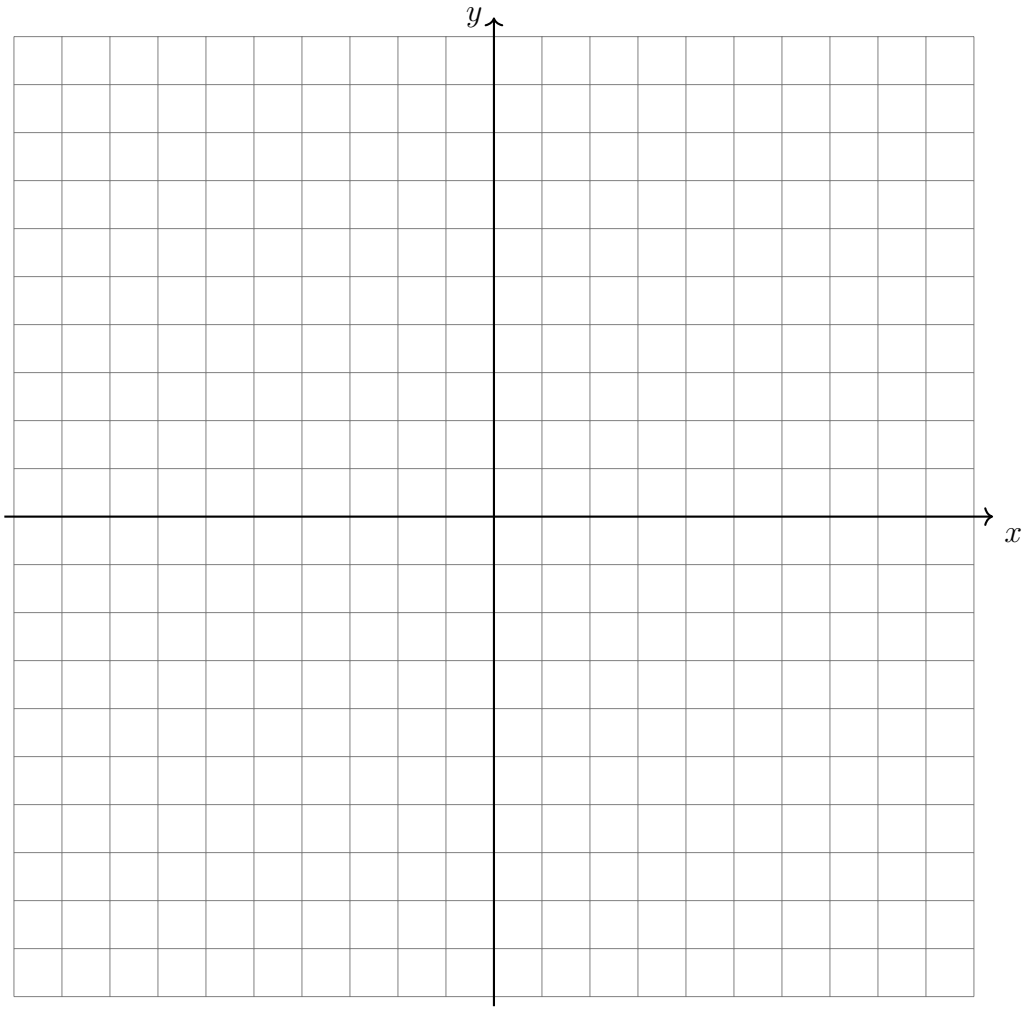
BECA / Dr. Huson / Regents Prep: Graphs First and last name:
22 November 2024 Section:

3.8 Do Now: Graphing 3rd order polynomials

1. Graph the cubic function $f(x) = x^4 + x^3 - 6x^2 - 4x + 8$ 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 $0 < x < 1$, is the function increasing or decreasing?



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

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

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

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

   (d) $\dfrac{4}{5x}=8$

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

   (a) $x^2-5x+4=0$

   (b) $x^2+7x+10=0$

4. Solve $\dfrac{1}{6x^2}=\dfrac{1}{2x}+\dfrac{1}{6x^2}$