Think It Through
January 18

1. Graph each of the following equations:

   (a) $y = \dfrac{2}{x+2} + 1$

   (b) $y = \dfrac{1}{x^2 - 1}$

   (c) $y = \dfrac{1}{x^2}$

   (d) $y = \dfrac{2}{(x-3)^2} - 1$

   (e) $y = \left| \dfrac{-2}{x+1} + 2 \right|$

   (f) $y = \dfrac{-1}{(x-1)^2 + 1}$

   (g) $y = \frac{1}{(x+1)^2 - 1}$

   (h) $y = \left| \left| \dfrac{1}{x} \right| - 1 \right|$

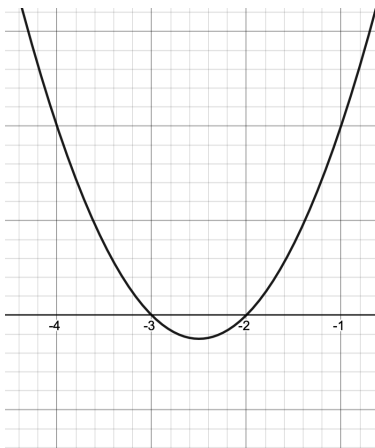2. Solve each of the following systems of equations both graphically and algebraically:

   (a) $y = \dfrac{1}{x}$, $y = |x|$

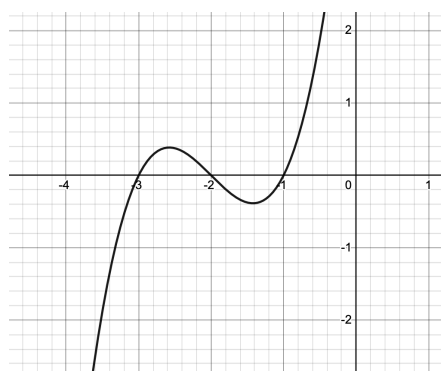   (b) $y = (x+1)^2 - 3$, $y = \dfrac{1}{|x^2|}$

   (c) $y = \dfrac{1}{(x-2)(x-3)}$, $y = |(x+2)(x+3)|$

3. Each graph shows the graph for a particular equationo, $y = f(x)$. Plot $y = |f(x)|$ and $y = \dfrac{1}{f(x)}$ for each.
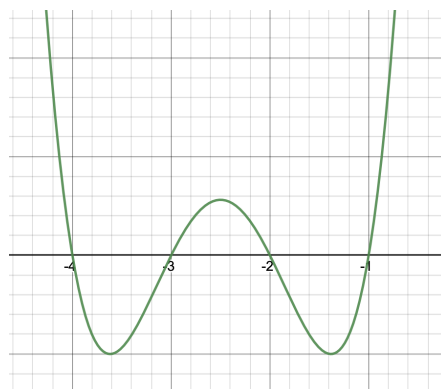
   (a) $y = (x+2)(x+3)$

(b) $y = (x+2)(x+3)(x+4)$

(c) $y = (x+1)(x+2)(x+3)(x+4)$

(d) $y = |(x+1)(x+2)(x+3)(x+4)| - 1$