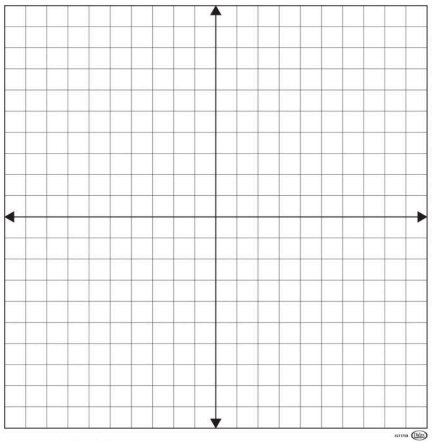
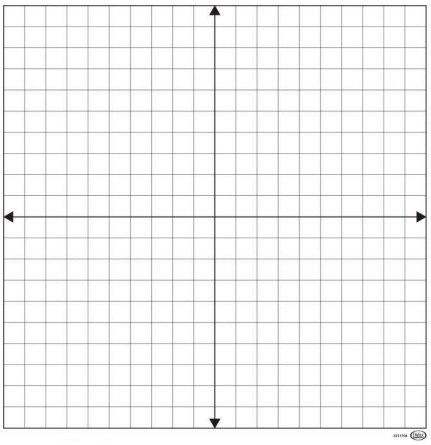
Pset 7.1 *Show all work!* November 1, 2021
Precalc *Do work in notebook!*

1. For (a) and (b), sketch the graph of the polynomial. Be sure to:
- **i. Apply the *leading coefficient test***
- **ii. Find the real roots of the polynomial**
- **iii. Plot 4 additional points**
- **iv. Draw the graph below! Sketch in the boxes below.**

a. $f(x) = 2x^3 - 6x^2$

b. $-2x^3 + 6x^2 - \frac{9}{2}x$





2. The total revenue for Nike is related to its advertising expenses by:

$$R(x) = 0.00001(-x^3 + 600x^2),\ 0 \le x \le 400$$

Where *x* represents advertising expenses and R(x) the total revenue.

a. Use the technique above to sketch a graph for Nike's revenue function.
b. Using the graph to justify how much it makes sense for Nike to spend on advertising. Be sure to justify your answer in at least one complete sentence!