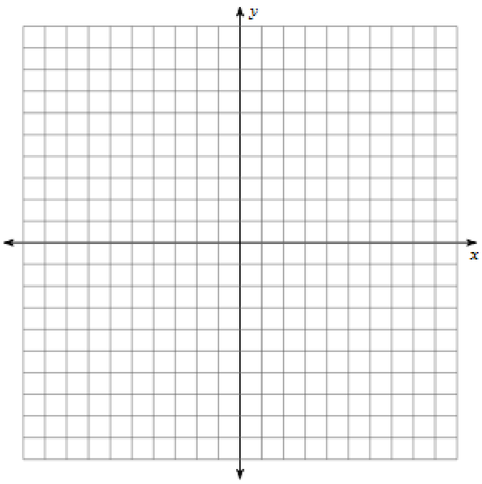
Secondary Math 3 Lite: Polynomial Graphs Name: ______________________________ Period: ______

2.3 Graphing Polynomials on a Calculator

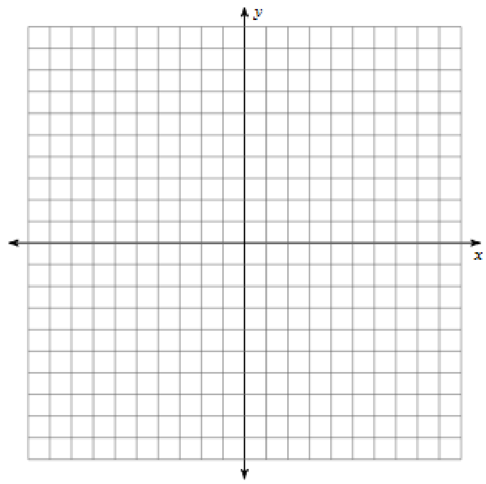
Graph questions 1-6 on your graphing calculator. Sketch the graph. Then, find the zeros, minimums, maximums, y-intercept, domain, range, and describe the end behavior.

1. $f(x) = 2x^3 + 5x^2 - 4x - 12$



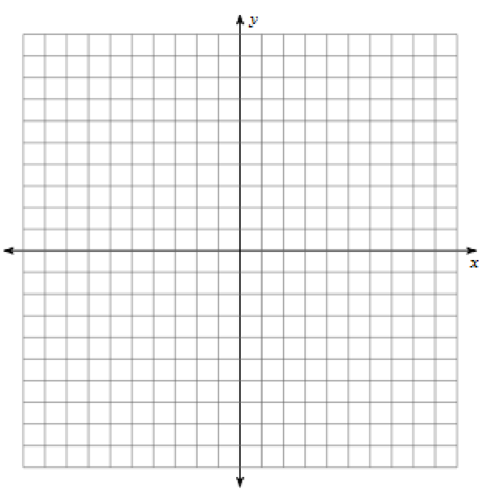
Zeros:
Minimums:
Maximums:
y-intercept:
Domain:
Range:
End Behavior:

2. $h(x) = -\frac{1}{4}x^4 - 2x^3 - \frac{13}{4}x^2 - 8x - 9$



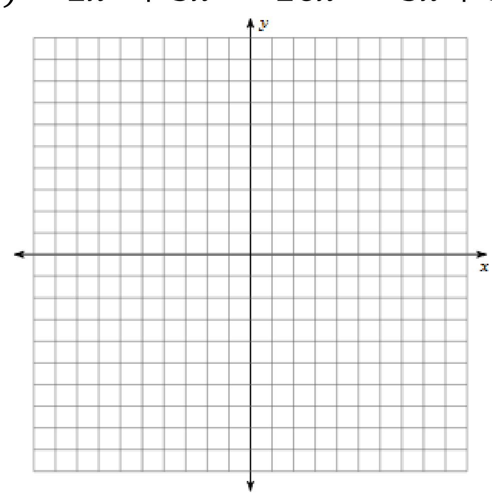
Zeros:
Minimums:
Maximums:
y-intercept:
Domain:
Range:
End Behavior:

3. $y = -x^3 - 11x^2 - 14x + 10$



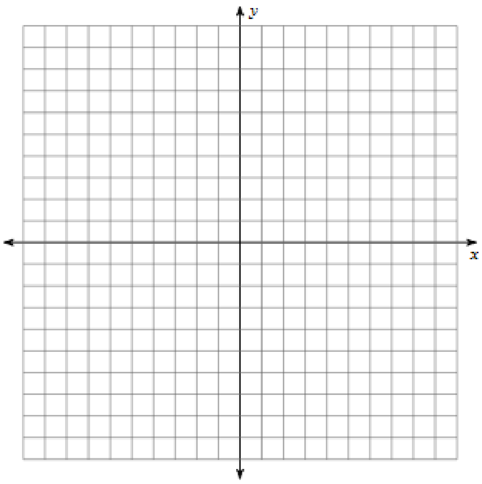
Zeros:
Minimums:
Maximums:
y-intercept:
Domain:
Range:
End Behavior:

4. $f(x) = 2x^4 + 3x^3 - 26x^2 - 3x + 54$



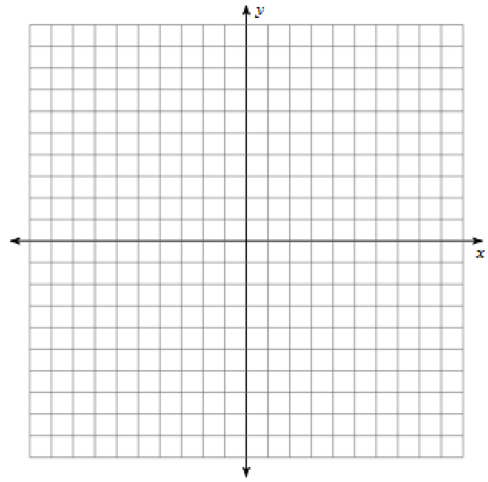
Zeros:
Minimums:
Maximums:
y-intercept:
Domain:
Range:
End Behavior:

5. $y = x^4 + 2x^3 - 5x^2 - 12x - 6$



Zeros:
Minimums:
Maximums:
y-intercept:
Domain:
Range:
End Behavior:

6. $g(x) = x^3 - 8$



Zeros:
Minimums:
Maximums:
y-intercept:
Domain:
Range:
End Behavior:

7. The number of bacteria in a refrigerated food is given by $N(T) = 20T^2 - 20T + 120$, for $-2 \le T \le 14$ and where T is the temperature of the food in Celsius. At what temperature will the number of bacteria be minimal? Sketch the graph.

8. The company you own has a large supply of 8 inch by 15 inch rectangular pieces of tin, and you decide to make them into boxes by cutting a square from each corner and folding up the sides (see Fig. 1). The volume is represented by the function $V(x) = 4x^3 - 46x^2 + 120x$.The amount of money you get for each box depends on how much the box holds, so you want to make boxes with the largest possible volume. How large a square should you cut from each corner (what value of x provides a maximum)?

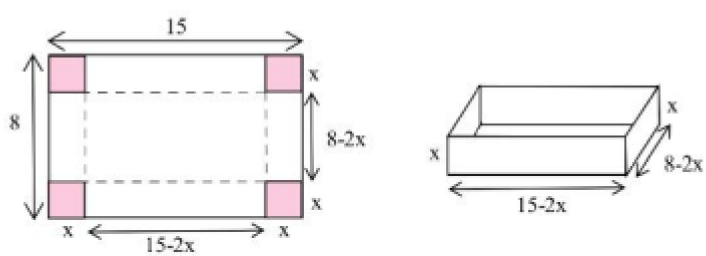


Fig. 1