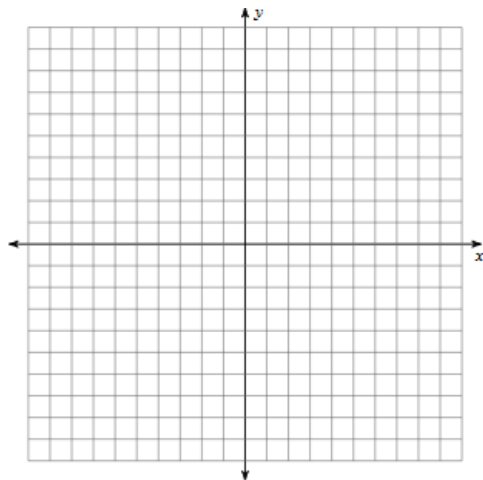


### 2.4 Graphing Polynomials on the TI84

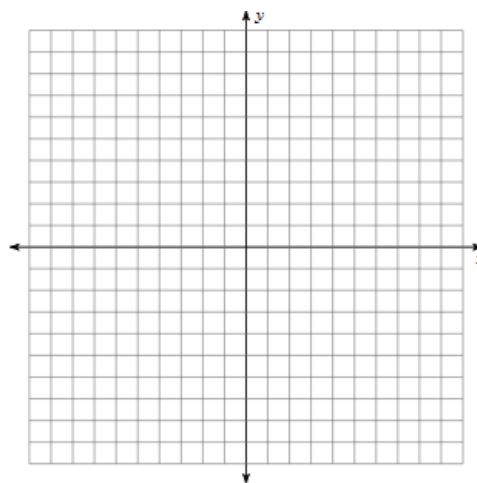
Graph questions 1-6 on your graphing calculator. Sketch the graph. Then, find the zeros, minimums, maximums, y-intercept, domain, range, and describe the end behavior.

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



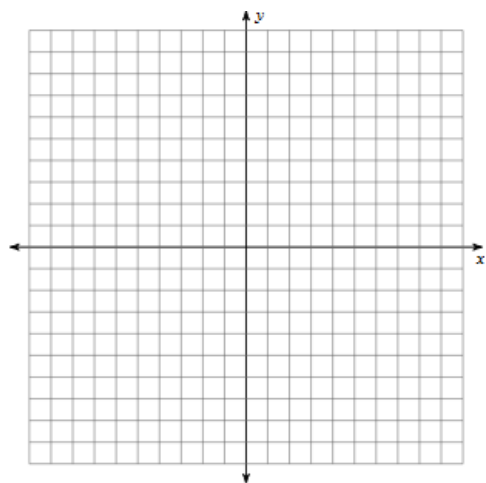
Zeros:  
 Minimums:  
 Maximums:  
 y-intercept:  
 Domain:  
 Range:  
 End Behavior:

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



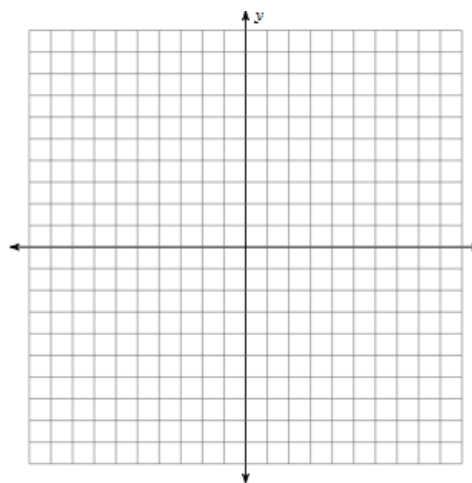
Zeros:  
 Minimums:  
 Maximums:  
 y-intercept:  
 Domain:  
 Range:  
 End Behavior:

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



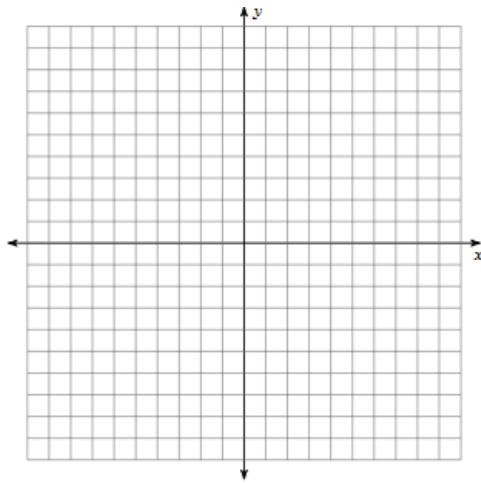
Zeros:  
 Minimums:  
 Maximums:  
 y-intercept:  
 Domain:  
 Range:  
 End Behavior:

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



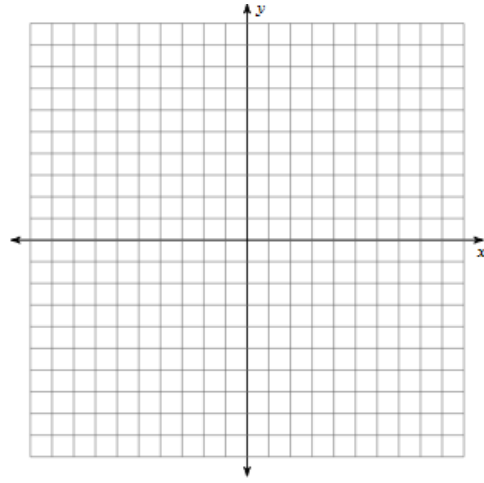
Zeros:  
 Minimums:  
 Maximums:  
 y-intercept:  
 Domain:  
 Range:  
 End Behavior:

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  $-2 \leq T \leq 14$  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?

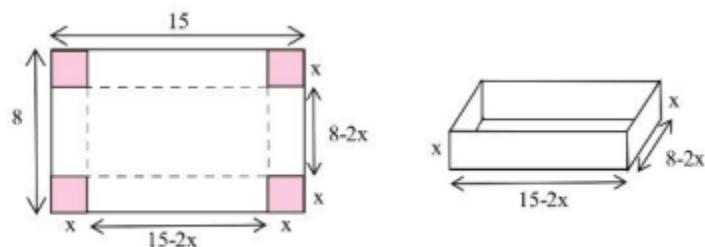


Fig. 1