1) Given: \( f(x) = |x + 1| \)
   a) Graph \( f(x) \) and \( y_1 = f(x+2) \) on the same x-y axes and describe their relationship.
   b) Graph \( f(x) \) and \( y_2 = f(x-4) \) on the same x-y axes and describe their relationship.
   c) Graph \( f(x) \) and \( y_3 = f(x) + 4 \) on the same x-y axes and describe their relationship.
   d) Graph \( f(x) \) and \( y_4 = f(x) - 2 \) on the same x-y axes and describe their relationship.
   e) Graph \( f(x) \) and \( y_4 = -3f(x) \) on the same x-y axes and describe their relationship.

2) Graph the following function:
   
   \[
   f(x) = \begin{cases} 
   x^2, & x \leq 0 \\
   \sqrt{x}, & 0 < x < 4 \\
   \frac{x}{2}, & x \geq 4 
   \end{cases}
   \]

3) Given: \( h(x) = -0.25x^4 + 0.67x^3 + 9.5x^2 - 20x - 50 \)
   a) Graph Approximate any local extrema
   b) Approximate any absolute extrema
   c) Determine the x-intervals where \( h \) is increasing or decreasing

4) Let: \( f(x) = x + 2 \), and \( g(x) = x^2 - 3x - 4 \),
   a) find \( f + g \)
   b) find \( f - g \)
   c) find \( f \times g \)
   d) find \( (f\times g)(2) \)
   e) find \( (g/f)(-1/2) \)
   f) find \( f(g(x)) \) and \( g(f(x)) \), graph and compare both functions.

5) The height \( Y \) (in feet) of a ball thrown by a child is given by:
   \[ Y = -\frac{1}{12}x^2 + 2x + 4 \]
   where \( x \) is the horizontal distance (in feet) from where the ball is thrown
   a) Graph \( Y \)
   b) How high was the ball when it left the child’s hand?
   c) How high was the ball when it was at its maximum height?
   d) How far from the child did the ball strike the ground?

6) A golf course company has determined that the daily per unit cost \( C \) of manufacturing \( x \) additional golf clubs may be expressed by the quadratic function:
   \[ C(x) = 5x^2 - 620x + 20,000 \]
   Graph \( C \)
   How many clubs should be manufactured to minimize the additional cost per club?
   At this level of production, what is the additional cost per club?

7) The height \( H \) of a ball (in feet) thrown in the air is given as a function of time \( t \) (in seconds) by:
   \[ H(t) = -16t^2 + 80t + 10 \]
   a) Find the initial height of the ball.
   b) Determine the time at which height is maximum.
   c) What is the maximum height of the ball?

8) The price \( p \) and the quantity \( x \) sold of a certain product obey the demand equation:
   \[ x = -20p + 500, \ 0 \leq p \leq 25 \]
If Revenue, $R(x)$, is given by: $R(x) = x*p$

a) Graph $R(x)$

b) What is the revenue when 20 units are sold?

c) What quantity $x$ maximizes revenue?

d) What is the maximum revenue?

e) What price should the company charge to maximize revenue?