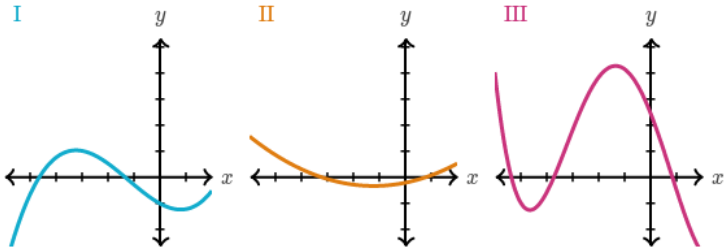
1. Let $f(x) = x^2$. Graph the following functions:
   (a) $y = f(3x)$
   (b) $y = f(x+1) + 4$
   (c) $y = 2f(x)$
   (d) $y = 2f(3x+1) + 4$.

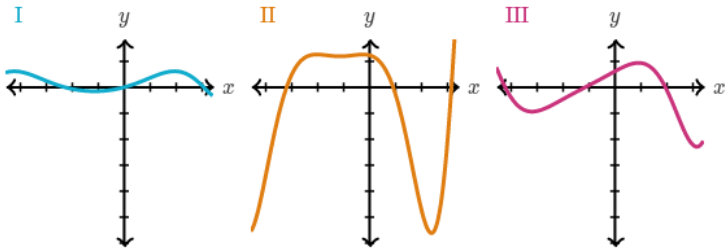
2. The graph of the equation $y = \sqrt{2 - |x|}$ has a corner at the point $(0, \sqrt{2})$. At what point is the corner of the graph of the equation $y = 6 + 3\sqrt{1 - |x-2|}$?

3. Find the equation of the line which is tangent to the graph of: $f(x) = 2x^{\frac{1}{4}}$ at the point $(16, f(16))$. Use your answers above to find estimates of $f(16.2)$. Further explain why you cannot use your answers above to estimate $f(0.2)$.

4. In each of the pictures below identify which of the graphs represents $f, f' f''$



(a)



(b)

5. *Extra Credit:*A football field is a rectangle 100 meters by 40 meters. During practice, the coach stands in the middle of the field yelling at a player who runs 100 meters from one end of the field to the other along the side of the field.
   (a) If the player has run x meters, find the distance $s(x)$ from the player to the coach.
   (b) If the player is running 30 cm/sec, how fast is the distance from the player to the coach increasing after the player has run 70 meters?