Quiz #9
MATH 142, Drost

1. Use the figure shown to answer each of the following questions:
   
   What is $f'(−2.5)$? (1 point)

   What is $f'(3)$? (1 point)

2. Find the critical value(s) of the function $f(x) = x + \ln(x^2)$ (1 point)

3. Determine the relative extrema of the function $f(x) = x + \ln(x^2)$ (1 point)

4. Find the intervals over which the function $f(x) = x + \ln(x^2)$ is increasing, or decreasing. (1 point)
5. The demand function for cell phones from Talk-A-Lot Company is given by \( p = -2x + 100 \) over the interval \((0, 15]\), where \( x \) is the number of cell phones and \( p \) is the price in dollars.

   a) Find the elasticity of demand at \( p = $50 \). (1 point)

   b) Is this elastic, inelastic, or unit elasticity? (1 point)

   c) Do you recommend the Talk-A-Lot Company, increase, reduce, or leave the price of their cell phones the same, to increase revenue? (1 point)

6. Arrange the points A, B, C and D in order of increasing slope of the tangent line in the figure below. (1 point)

7. T or F A critical value for \( f(x) \) is an \( x \)-value for which either \( f'(x) = 0 \) or \( f'(x) \) is undefined. (1 point)