7. (2 points each) Circle “True” or “False” for each of the following problems. Circle “True” only if the statement is always true. No explanation is necessary.

(a) If \( f(x) \) is increasing, then \( f'(x) \) is increasing.

   True    False

(b) Suppose \( f'(a) \geq f'(b) \) whenever \( a \leq b \). Then \( f \) has no points of inflection.

   True    False

(c) If \( f(x) \) is defined for all \( x \), then \( f'(x) \) is defined for all \( x \).

   True    False

(d) If \( f \) and \( g \) are functions whose second derivatives are defined, then \( (fg)'' = fg'' + f''g \).

   True    False

(e) If the radius of a circle is increasing at a constant rate, then so is the area.

   True    False

(f) If \( f(x) \) has an inverse function, then the derivative of the inverse function is \( 1/f'(x) \).

   True    False

(g) If \( f'(1) = -3.4 \) and \( g'(1) = 4.1 \), then the function \( h(x) = f(x) + g(x) \) is increasing at \( x = 1 \).

   True    False

(h) The graph of \( y = xe^{-0.1x} \) has an inflection point at \( x = 20 \).

   True    False