1. (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) Every continuous function is differentiable.

    True       False

(b) If \( f'(x) > 0 \) for all \( x \) in the interval \((a, b)\), then \( f \) is increasing on the interval \((a, b)\).

    True       False

(c) By definition, the instantaneous velocity is equal to a difference quotient.

    True       False

(d) Every rational function has a vertical asymptote.

    True       False

(e) If a function is not continuous at a point, then it is not defined at that point.

    True       False

(f) If a function \( f \) is decreasing on an interval, then \( f' \) is decreasing on that interval.

    True       False