

Answers for class prep quiz on section 2.1, Stewart's Calculus (8th ed.)

1. **Answer:** (a). The standard relationship is $d = st$ (using s instead of the usual r), and (b) and (d) are algebraically equivalent.
2. **Answer:** (c). If we only consider $t = 2$, $r = d/t$ becomes $r = 0/0$. The numerator isn't a problem, but the denominator is. (As for (a), as we'll see, our methods for computing velocity don't depend on having constant velocity.)
3. **Answer:** (c). The given expression is the average rate of change of g between $x = 2$ and $x = 5$, which is the slope of a secant line, not a tangent line. (The slope of a tangent line is related to an *instantaneous* rate of change). The given expression is not the equation of a line, as the equation of a line would contain variables x and y .
4. **Answer:** (b). We calculate that $\frac{s(3.2) - s(3)}{3.2 - 3} = -99.2$. Forgetting to divide by 0.2 gives (c); ignoring the sign gives (d). Note that velocity, unlike speed, can be negative.