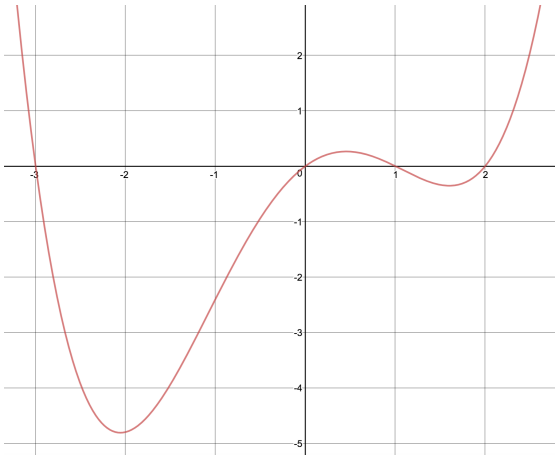
Quiz 9

Name: _____

1. Given below is the graph of $f'(t)$. Describe the invervals where the function $f(t)$ is increasing and decreasing.



f is increasing from $-\infty$ to -3, from 0 to 1, and from 2 to ∞. Interval notation: $(-\infty, -3) \cup (0, 1) \cup (2, \infty)$ f is decreasing from -3 to 0 and from 1 to 2. Interval notation: $(-3, 0) \cup (1, 2)$.

2. A ball is tossed in the air, and its height off the ground (in meters) at time t (in seconds) is modeled by the function

$$s(t) = -4.9t^2 + 2t + 1.$$

When does the ball reach its maximum height? [You may use the results from class to calculate derivatives.]

Find when the velocity is equal to zero. $v(t) = s'(t) = -9.8t + 2$, which equals 0 when $t = 2/9.8 \approx 0.2$ seconds.