Drill_Rate of Change

1. The table below shows the distance an object traveled over a period of time.

t (sec)	0	1	2	3	4	5	6
y (feet)	10	45	70	85	90	85	70

a. Compute the **average rate of change** over the interval of $[2, 5]$. Include units in your answer.

b. Write the equation of the **secant line** over the interval of $[2\ , 5]$.

2. Given: $f(x) = 2x^2 - 5x$

a. Find the average rate of change of the function over the interval of $[-1\ , 4]$.

b. Write the equation of the secant line from $x = -1\ to\ x = 4$.

c. Find the instantaneous rate of change for $f(x) = 2x^2 - 5x$ at $x = -1$

3. Given the function $f(x) = x^2 + 2x - 4$

a. Find the **slope** of $f(x)\ at\ x = 3$ using the derivative definition at a point.

b. Write the equation of the line **tangent** to the curve at $x = 3$.

c. Write the equation of the line **normal** to the curve at $x = 3$.