

AP CALCULUS AB

- 1) In 1997, 24.6% of U.S. adults smoked cigarettes regularly. In 2020, 13.7% of adults smoked. Find the average rate of change of percent of adults with respect to time over this time interval.

- 2) For $f(x) = 4x^2 - 5x + 20$, find the average rate of change of f with respect to x over $x \in [3, 7]$.

AVERAGE AND INSTANTANEOUS RATES OF CHANGE

- 3) For $f(x) = -0.1x^3 + 1.5x^2 - 6.3x + 7.5$,
- Find the slope of the function m_T at $x = 6$.
 - Find the equation of the line tangent to $y = f(x)$ at $x = 6$.
 - Find the equation of the line normal to $y = f(x)$ at $x = 6$.
 - Graph $y = f(x)$, and the tangent and normal lines, on the grid provided.

