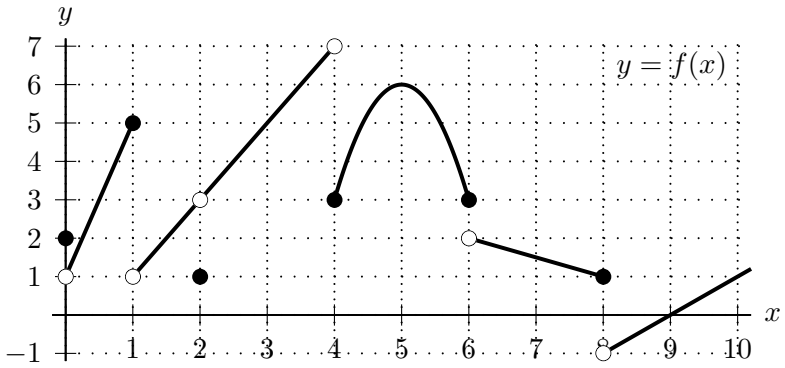
6. [12 points] A portion of the graph of a function f is shown below.



a. [2 points] Find an equation for the tangent line to the graph of $y = f(x)$ at $x = 0.5$

Answer: $y =$ $4x + 1$

For parts **b-d** below, evaluate the given expression. If the expression does not represent a real number, write DNE.

b. [2 points] $\lim_{u \to 2} f(u)$

Answer: $\lim_{u \to 2} f(u) =$ 3

c. [2 points] $f'(f(7))$

Answer: $f'(f(7)) =$ $f'(1.5) = 2$

d. [2 points] $\ln(f'(9))$

Answer: $\ln(f'(9)) =$ $\ln(1) = 0$

For each of the following statements, find all real numbers c in the interval $0 \leq c \leq 10$ such that the statement holds. If there are no such values of c, write NONE.

e. [2 points] $\lim_{x \to c^+} f(x) = f(c)$ and f is not continuous at c.

Answer: $c = 4$

f. [2 points] $f(c)f'(c) = 0$.

Answer: $c = 5, 9$