

7. Use the formal definition of the derivative of a function to prove:

$$\frac{d}{dx} \sqrt{x} = \frac{1}{2\sqrt{x}}$$

(hint: conjugate!)

8. Given  $f(x) = 2x^3 - 4x + 5$

a) Use the power rule to find  $f'(x)$ .

b) Find all points on  $f(x)$  where the instantaneous rate of change is 21.