

Class Drill 9b: Rate of Change Problem (Rational Function with Peak)

A drug is administered by pill. The drug concentration (in milligrams per milliliter) in the bloodstream t hours after the pill is taken is given by the formula

$$C(t) = \frac{0.14t}{t^2 + 1} \text{ for } 0 \leq t$$

(A) Find $C(0.5)$ and $C(3)$. (Give exact answers in symbols and then approximate answers in decimals. Include units in your answer.)

(B) Find $C'(t)$.

(C) Find $C'(0.5)$ and $C'(3)$. (Give exact answers in symbols and then approximate answers in decimals. Include units in your answer.)

(D) Interpret the results of (A) & (C). (Refer to textbook example 6 on page 230 with similar question.)

(E) A graph of the concentration is shown below. Illustrate each of the quantities found in questions (A) and (C).

