20-P-MOM-PT-009

December 31, 2020 3:26 AM

If momentum "p" varies with time such that p= 5.67t^8.91 and is measured in kg m/s, what is net force as a function of time? Assume the answer is measured in Newtons.

$p = 5.67 t^{8.91}$ kg m/s

$F = \frac{dp}{dt}$

$\boxed{F = 50.52 t^{7.91} \text{ N}}$

What is the net force at t=2.31 seconds?

$F = 50.52 (2.31)^{7.91}$ N

$\boxed{F = 3.8 \times 10^{4} \text{ N}}$