

Calculator Question 1

A rat moves through a tunnel with velocity given by $v(t) = t^3 - 9t^2 + 19t$ (in feet/sec), over a 6 second time interval, $0 \leq t \leq 6$.

- (a) Find the change in position of the rat (relative to its starting point) after 6 seconds.
 - (b) Find the total distance traveled by the rat over the 6 seconds.
 - (c) Find the average velocity of the rat over this time interval.
 - (d) Find the average speed of the rat over this time interval.
 - (e) Find the average acceleration of the rat over this time interval
 - (f) Find the time when the rat is farthest from where he started (over this time interval).
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