
8.3 Warm-Up April 8, 2020

Let $v_Q(t) = t^2 - 8t + 15$ be the velocity of particle Q in miles per hour and $0 \leq t \leq 8$ where t is measured in hours.

Interpret the following in context using correct units:

$$a_Q(2) = -4$$

$$\int_0^3 v_Q(t) dt = 18$$

$$\frac{1}{3} \int_0^3 v_Q(t) dt = 6.$$

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$$a_Q(2) = -4$$

At $t = 2$ hours, particle Q is accelerating at -4 miles per hour².

-OR- At $t = 2$ hours, particle Q 's velocity is decreasing at 4 miles/hour per hour.

$$\int_0^3 v_Q(t) dt = 18$$

On the interval $[0, 3]$ hours, particle Q has moved 18 miles to the right.

$$\frac{1}{3} \int_0^3 v_Q(t) dt = 6.$$

On the interval $[0, 3]$ hours, particle Q 's average velocity was 6 miles per hour.