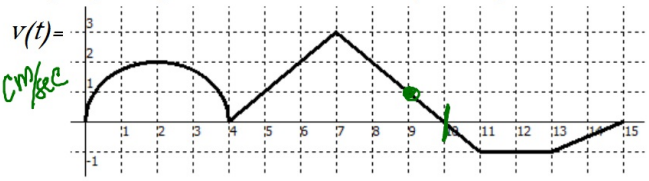
Calculus WarmUp

review for 2nd Qtr. Final Exam

The graph represents the velocity of a particle moving along the *x*-axis in units of cm/sec.



$v'(t) = a(t)$

1) v(7) = 3 $\frac{cm}{sec}$

2) a(9) = -1 $\frac{cm}{sec^2}$

7) $\int_0^{10} v(t)\,dt$

$= \frac{1}{2}\pi(2)^2 + \frac{1}{2}(6)(3)$ cm.

$= 2\pi + 9$ cm.

3) When does the particle move forward? Justify your answer

(0,4) (4, 10) b/c $v(t) > 0$

4) When does the particle change direction? Justify your answer

10 sec. b/c v(t) changes signs there

5) When does the particle move at the greatest speed? Justify your answer

7 sec. b/c v' changes from + to −

6) When does the particle slow down? Justify your answer

(2,4) (7, 10) (13, 15) b/c v(t) and a(t) have different signs

7) How far has the particle traveled in the first 10 seconds? Justify your answer

$\int$

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