

Review 7.1-7.2

Name _____

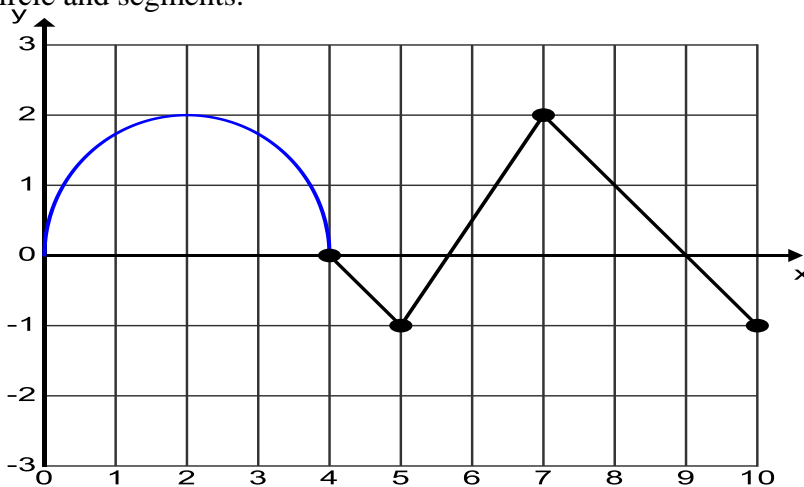
1. Suppose a particle is moving on the x-axis with a velocity of $v(t) = 2.2 - 1.1t$ on the interval $0 \leq t \leq 4$ and the velocity is measured in cm/sec. (Calc. ok)

- a) Find the displacement of the particle on the interval.

- b) Find the total distance traveled on the interval.

- c) Find the final position of the particle if $s(0) = 4$.

2. Suppose a fly is walking on a floor with a starting position of 10 cm from the edge of the wall. The fly's velocity is drawn below and the velocity is measured in cm/sec. Assume that the graph is made up of a semicircle and segments.



- a) Find the velocity of the fly at time $t = 5$ sec; $t = 7$ sec.

- b) Find the acceleration of the fly at time $t = 2$ sec; $t = 8$ sec.

- c) Find the displacement of the fly from $t = 0$ sec to $t = 10$ sec.

- d) Find the total distance traveled from $t = 0$ sec to $t = 10$ sec.

- e) Find the position of the fly from the wall at $t = 8$ sec; at $t = 10$ sec.

3. Find the area between the curves $y = x^2 - 2$ and $y = 14$. (No Calc.)

4. Let R be the region bounded by the graphs of $y = \sqrt{x}$, $y = e^{-x}$, and the y-axis. Find the area of the region R. (Calculator OK)

5. Find the area between the graphs of $x + y^2 = 3$ and $4x + y^2 = 0$.

6. Suppose that the rate at which oil is pumped into a pipe (in thousands of gallons per hour) is $r(t) = 25.05e^{\frac{t}{5}}$, where t is the number of hours past midnight. Find the total amount of oil pumped into the pipe in 4 hours; in one day. (Calc. OK)