AP Calculus Quiz Review 8.1 - 8.2

Name\_\_\_\_\_

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

The function v(t) is the velocity in m/sec of a particle moving along the x-axis. Determine when the particle is moving to the right, to the left, and stopped.

 1)  $v(t) = e^{\cos t} \sin t$ ,  $0 \le t \le 2\pi$  1)

 Solve the problem.
 2) The velocity in m/sec of a particle moving along the x-axis is given by the function 2)
 2)

  $v(t) = 2 \cos^2 t \sin t$ ,  $0 \le t \le \pi$  Find the particle's displacement for the given time interval.
 2)

 The function v(t) is the velocity in m/sec of a particle moving along the x-axis. Find the total distance traveled by the particle.
 3)  $v(t) = 4 \cos t$ ,  $0 \le t \le 2\pi$  3)

4)

5)

4)  $v(t) = t^2 - 7t + 12, 0 \le t \le 4$ 

Solve the problem.

5) A particle moves along the x-axis (units in cm). Its initial position at t = 0 sec is x(0) = 14. The figure shows the graph of the particle's velocity v(t). The numbers are the areas of the enclosed regions.



What is the particle's displacement between t = 0 and t = c?

- 6)
- 6) A surveyor measured the length of a piece of land at 100-ft intervals (x), as shown in the table. Use the Trapezoidal Rule to estimate the area of the piece of land in square feet.

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

Find the area of the shaded region.



SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.



Find the area of the regions enclosed by the lines and curves.

9)  $y = x^2 - 3$  and y = 13

8)

7)

9)

Find the area enclosed by the given curves.

10) Find the area of the region in the first quadrant bounded by the line y = 8x, the line x = 1, 10)

the curve 
$$y = \frac{1}{\sqrt{x}}$$
, and the x-axis.

Find the area of the regions enclosed by the lines and curves.

11) 
$$x = 2y^2 - 2$$
,  $x - y^2 = 7$ 

11) \_\_\_\_\_

Find the area of the region(s) enclosed by the given curves. 12)  $y = -4\sin x$ ,  $y = \sin 2x$ ,  $0 \le x \le \pi$ 

12) \_\_\_\_\_