

Due: Wed Jan 13 2016 11:00 PM PST

Question

1 2 3 4 5 6 7 8 9 10

1. Question Details

SCalcET7 4.9.003. [2559099]

Find the most general antiderivative of the function. (Check your answer by differentiation. Use C for the constant of the antiderivative.)

$$f(x) = \frac{3}{4} + \frac{2}{3}x^2 - \frac{4}{5}x^3$$

$$F(x) = \text{[input box]}$$

2. Question Details

SCalcET7 4.9.015. [2559499]

Find the most general antiderivative of the function. (Check your answer by differentiation. Use C for the constant of the antiderivative.)

$$g(t) = \frac{8 + t + t^2}{\sqrt{t}}$$

$$G(t) = \text{[input box]}$$

3. Question Details

SCalcET7 4.9.020. [2559322]

Find the most general antiderivative of the function. (Check your answer by differentiation. Use C for the constant of the antiderivative.)

$$f(x) = 7\sqrt{x} + 4 \cos x$$

$$F(x) = \text{[input box]}$$

4. Question Details

SCalcET7 4.9.045. [1836322]

Find f .

$$f''(x) = 7 + \cos x, \quad f(0) = -1, \quad f(5\pi/2) = 0$$

$$f(x) = \text{[input box]}$$

5. Question Details

SCalcET7 4.9.046. [1835742]

Find f .

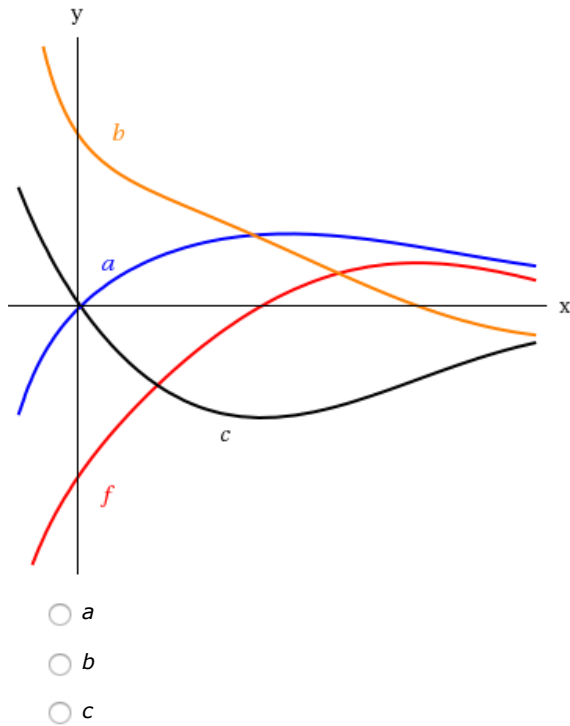
$$f''(t) = 6e^t + 7 \sin t, \quad f(0) = 0, \quad f(\pi) = 0$$

$$f(t) = \text{[input box]}$$

6. Question Details

SCalcET7 4.9.052. [1642778]

The graph of a function f is shown. Which graph is an antiderivative of f ?



7. Question Details

SCalcET7 4.9.064. [1835869]

A particle is moving with the given data. Find the position of the particle.

$$a(t) = t^2 - 3t + 9, \quad s(0) = 0, \quad s(1) = 20$$

$$s(t) = \boxed{}$$

8. Question Details

SCalcET7 4.9.065. [1835613]

A stone is dropped from the upper observation deck of a tower, 300 m above the ground. (Assume $g = 9.8 \text{ m/s}^2$.)

(a) Find the distance (in meters) of the stone above ground level at time t .

$$h(t) = \boxed{}$$

(b) How long does it take the stone to reach the ground? (Round your answer to two decimal places.)

$$\boxed{} \text{ s}$$

(c) With what velocity does it strike the ground? (Round your answer to one decimal place.)

$$\boxed{} \text{ m/s}$$

(d) If the stone is thrown downward with a speed of 7 m/s, how long does it take to reach the ground? (Round your answer to two decimal places.)

$$\boxed{} \text{ s}$$

9. Question Details

SCalcET7 4.9.075. [1642907]

What constant acceleration is required to increase the speed of a car from 24 mi/h to 60 mi/h in 4 s? (Round your answer to two decimal places.)

 ft/s²

10. Question Details

SCalcET7 4.9.079. [1643137]

A high-speed bullet train accelerates and decelerates at the rate of 10 ft/s². Its maximum cruising speed is 105 mi/h. (Round your answers to three decimal places.)

(a) What is the maximum distance the train can travel if it accelerates from rest until it reaches its cruising speed and then runs at that speed for 15 minutes?

 mi

(b) Suppose that the train starts from rest and must come to a complete stop in 15 minutes. What is the maximum distance it can travel under these conditions?

 mi

(c) Find the minimum time that the train takes to travel between two consecutive stations that are 52.5 miles apart.

 min

(d) The trip from one station to the next takes at minimum 37.5 minutes. How far apart are the stations?

 mi

Assignment Details