1. [–/1 Points] DETAILS SCALCET9 5.4.009.NVA

Find the general indefinite integral. (Use C for the constant of integration.)

$$\int (x^{1.3} + 11x^{4.5})\, dx$$

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2. [–/1 Points] DETAILS SCALCET9 5.4.010.NVA

Find the general indefinite integral. (Use C for the constant of integration.)

$$\int \sqrt[6]{x^7}\, dx$$

3. [–/1 Points] DETAILS SCALCET9 5.4.015.NVA

Find the general indefinite integral. (Use C for the constant of integration. Remember to use absolute values where appropriate.)

$$\int \frac{4 + \sqrt{x} + x}{x}\, dx$$

4. [–/1 Points] DETAILS SCALCET9 5.4.022.NVA

Find the general indefinite integral. (Use C for the constant of integration.)

$$\int \sec(t)(5\sec(t) + 7\tan(t))\,dt$$

5. [–/1 Points] DETAILS SCALCET9 5.4.031.

Evaluate the definite integral.

$$\int_0^2 (2x - 9)(4x^2 + 2)dx$$

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6. [–/1 Points] DETAILS SCALCET9 5.XP.4.021.

Evaluate the integral.

$$\int_0^1 (x^{14} + 14^x)\, dx$$

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7. [–/1 Points] DETAILS SCALCET9 5.4.072.MI.SA.

This question has several parts that must be completed sequentially. If you skip a part of the question, you will not receive any points for the skipped part, and you will not be able to come back to the skipped part.

Tutorial Exercise

The acceleration function (in m/s^2) and the initial velocity $v(0)$ (in m/s) are given for a particle moving along a line.

$$a(t) = 2t + 4, \quad v(0) = -12, \quad 0 \le t \le 6$$

(a) Find the velocity at time t.

(b) Find the distance traveled during the given time interval.

Click here to begin!

8. [–/1 Points] DETAILS SCALCET9 5.4.074.

Water flows from the bottom of a storage tank at a rate of $r(t) = 300 - 6t$ liters per minute, where $0 \le t \le 50$. Find the amount of water (in liters) that flows from the tank during the first 40 minutes.

liters

9. [–/1 Points] **DETAILS** SCALCET9 5.4.077.

The marginal cost of manufacturing x yards of a certain fabric is

$$C'(x) = 3 - 0.01x + 0.000009x^2$$

in dollars per yard. Find the increase in cost (in dollars) if the production level is raised from 2,000 yards to 4,000 yards.

$ [ ]

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10. [–/1 Points] **DETAILS** SCALCET9 5.4.081.

A bacterial population is 5000 at time $t = 0$, and its rate of growth is $1{,}000 \cdot 5^t$ bacteria per hour at time t hours. What is the population after one hour? (Round your answer to the nearest whole number.)

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