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

Evaluate.

1. ∫ (3x8 - 7x3 + 7) dx

Find the integral.

x 6

1. ∫ + dx

6 x

x dx

1. ∫

(7x2 + 3)5

1. ∫ 16p2e(4p3) dp

Solve the problem.

1. The rate of expenditure of a particular machine is given by M'(x) = 6x x2 + 5, where x is time measured in years. Maintenance costs through the second year are $52. Find the total maintenance function.

Evaluate the integral.

3

1. ∫ (2x3 - 8x-2) dx Two decimal places.

1

-1

1. ∫ 5x-4 dx Express the answer as a fraction. -2

Evaluate the definite integral.

3 x

1. ∫ dx Four decimal places. 0 (3x2 + 3)3

Use the definite integral to find the area between the x-axis and the graph of f(x) over the indicated interval. Write the answer as a fraction.

1. f(x) = 2x - x2; [0, 2]

3

1. f(x) = ; [1, 3] x3

Find the area of the shaded region.

11)



12)

Hint: solve

x

 - 3 = 0 to find the point needed.

Solve the problem.

1. A certain company has found that its expenditure rate per day (in hundreds of dollars) on a certain type of job is given by E'(x) = 2x + 4, where x is the number of days since the start of the job. Find the expenditure if the job takes 6 days.

Find the area bounded by the given curves.

1. y = x3, y = 4x

Solve the problem.

1. Find the consumer's surplus if the demand function for an item is given by D(x) = 30 - x2, assuming supply and demand are in equilibrium at x = 4.

Find the general solution of the differential equation.

dy 2 - 4x

1. = 24x

dx

Find the particular solution of the differential equation.

dy 2 - 4x + 20; y = 20 when x = 1 17) = 6x dx