1. (2 pts) A car comes to a stop six seconds after the driver applies the brakes. While the brakes are on, the following velocities are recorded:

Time since brakes applied (sec)	0	2	4	6
Velocity (ft/s)	89	45	16	0

Give lower and upper estimates (using all of the available data) for the distance the car traveled after the brakes were applied.
lower: _____
upper: _____
(for each, include **units**)
On a sketch of velocity against time, show the lower and upper estimates you found above. .
Answer(s) submitted:

-
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(incorrect)

2. (3 pts) In this problem, use the general expressions for left and right sums,

$$\text{left-hand sum} = f(t_0)\Delta t + f(t_1)\Delta t + \cdots + f(t_{n-1})\Delta t$$

and

$$\text{right-hand sum} = f(t_1)\Delta t + f(t_2)\Delta t + \cdots + f(t_n)\Delta t,$$

and the following table:

t	0	3	6	9	12
$f(t)$	24	20	19	18	15

A. If we use $n = 4$ subdivisions, fill in the values:
$\Delta t =$ ___
$t_0 =$ ___; $t_1 =$ ___; $t_2 =$ ___; $t_3 =$ ___; $t_4 =$ ___
$f(t_0) =$ ___; $f(t_1) =$ ___; $f(t_2) =$ ___; $f(t_3) =$ ___; $f(t_4) =$ ___
B. Find the left and right sums using $n = 4$
left sum = _____
right sum = _____
C. If we use $n = 2$ subdivisions, fill in the values:
$\Delta t =$ ___
$t_0 =$ ___; $t_1 =$ ___; $t_2 =$ ___
$f(t_0) =$ ___; $f(t_1) =$ ___; $f(t_2) =$ ___
D. Find the left and right sums using $n = 2$
left sum = _____
right sum = _____
Answer(s) submitted:

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(incorrect)

3. (1 pt) The velocity of a car is $f(t) = 13t$ meters/second. Use a graph of $f(t)$ to find the exact distance traveled by the car, in meters, from $t = 0$ to $t = 10$ seconds.
distance = _____ (include **units**)
Answer(s) submitted:

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(incorrect)

4. (1 pt) The velocity of a particle moving along the x-axis is given by $f(t) = 6 - 2t$ cm/sec. Use a graph of $f(t)$ to find the exact change in position of the particle from time $t = 0$ to $t = 4$ seconds.
change in position = _____ (include **units**)
Answer(s) submitted:

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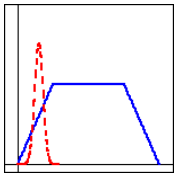
(incorrect)

5. (2 pts) Two cars start at the same time and travel in the same direction along a straight road. The figure below gives the velocity, v (in km/hr), of each car as a function of time (in hr).



The velocity of car A is given by the solid, blue curve, and the velocity of car B by dashed, red curve.
(a)
Which car attains the larger maximum velocity?

- A. A
- B. B

(b)
Which stops first?

- A. A
- B. B

(c)
Which travels farther?

- A. A
- B. B

Answer(s) submitted:

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(incorrect)

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6. (1 pt) Suppose that an accelerating car goes from 0 mph to 68.2 mph in five seconds. Its velocity is given in the following table, converted from miles per hour to feet per second, so that all time measurements are in seconds. (Note: 1 mph is 22/15 ft/sec.) Find the average acceleration of the car over each of the first two seconds.

t	0	1	2	3	4	5
$v(t)$	0.00	34.09	59.09	77.27	90.91	100.00

average acceleration over the first second = _____ (include **units**)
average aceleration over the second second = _____ (include **units**)

Answer(s) submitted:

-
-

(incorrect)

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7. (2 pts) The velocity function is $v(t) = -1t^2 - 2t + 6$ for a particle moving along a line. Find the displacement (net distance covered) of the particle during the time interval $[-3, 6]$.

Displacement = _____

Answer(s) submitted:

-

(incorrect)