Question	1	2	3	4	5	6

Instructions

Name_____

Section_____

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1. Question Details   SCalc8 4.1.013.MI. [3354043]

The speed of a runner increased steadily during the first three seconds of a race. Her speed at half-second intervals is given in the table. Find lower and upper estimates for the distance that she traveled during these three seconds.

[_____] ft (smaller value)

[_____] ft (larger value)

t (s)	0	0.5	1.0	1.5	2.0	2.5	3.0
v (ft/s)	0	6.7	11.2	14.1	18.8	19.4	20

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2. Question Details   SCalc8 4.1.025. [3353919]

Determine a region whose area is equal to the given limit. Do not evaluate the limit.

$$\lim_{n \to \infty} \sum_{i=1}^{n} \frac{\pi}{9n} \tan\left(\frac{i\pi}{9n}\right)$$

- ○ $x \tan(x)$ on $\left[-\frac{\pi}{9}, \frac{\pi}{9}\right]$

- ○ $\tan(x)$ on $\left[0, \frac{\pi}{9}\right]$

- ○ $x \tan(x)$ on $\left[0, \frac{\pi}{9}\right]$

- ○ $\tan(x)$ on $[0, 9\pi]$

- ○ $\tan(x)$ on $\left[-\frac{\pi}{9}, \frac{\pi}{9}\right]$

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3. Question Details   SCalc8 4.2.019. [3353632]

Express the limit as a definite integral on the given interval.

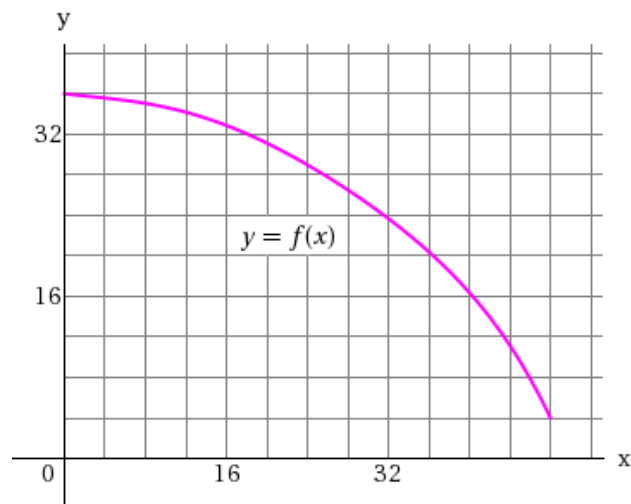$$\lim_{n \to \infty} \sum_{i=1}^{n} [9(x_i^*)^3 - 7x_i^*]\Delta x, \quad [2, 5]$$

$$\int_{2}^{\boxed{}} \left(\boxed{} \right) dx$$

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4. Question Details   SCalc8 4.2.043. [3354077]

Given that $\int_{0}^{1} x^2 \, dx = \frac{1}{3}$, use this fact and the properties of integrals to evaluate $\int_{0}^{1} (4 - 6x^2) \, dx$.

[_____]

Consider the following.

(a) Use six rectangles to find estimates of each type for the area under the given graph of f from $x = 0$ to $x = 48$.

    (i) Sample points are left endpoints.

    $L_6 = $ [_____]

    (ii) Sample points are right endpoints.

    $R_6 = $ [_____]

    (iii) Sample points are midpoints.

    $M_6 = $ [_____]

(b) Is L_6 an underestimate or overestimate of the true area?
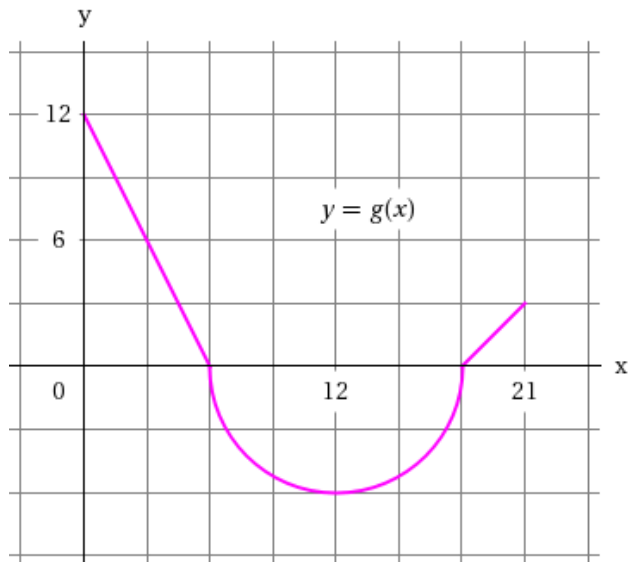
    ○ overestimate

    ○ underestimate

(c) Is R_6 an underestimate or overestimate of the true area?

    ○ overestimate

    ○ underestimate

(d) Which of the numbers gives the best estimate?

    ○ L_6

    ○ M_6

    ○ R_6

The graph of g consists of two straight lines and a semicircle. Use it to evaluate each integral.

$y = g(x)$

(a) $\displaystyle\int_0^6 g(x)\,dx$

(b) $\displaystyle\int_6^{18} g(x)\,dx$

(c) $\displaystyle\int_0^{21} g(x)\,dx$

Assignment Details

Name (AID): **241 Sec 12, 13 Week 13 Worksheet (15665801)**

Submissions Allowed: **5**

Category: **Homework**

Code:

Locked: **No**

Author: **Greuling, Jason (** jlgreuling@math.hawaii.edu **)**

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