



Practice with Integrals

Please choose the best answer to each of the following questions.

1. Area between $y = 5x^2 - 6x$ and $y = -1$, and $x = 0$ and $x = 3$ is

21

18

27

28

2. $g'(x) = x^2 - \sin 4x$
 $g(x) = [?] + 2$

$$x^3 + \frac{1}{4} \cos(4x)$$

$$\frac{x^3}{3} - \frac{1}{4} \sin(4x)$$

$$x^3 - \cos(4x)$$

$$\frac{x^3}{3} + \frac{1}{4} \cos(4x)$$

3. x = the width of a window. A mountainscape fills $x - 2 \cos(x^2)$ of the window. The equation for the line between the ground and the sky is....

$$1 - \sin(x^2) 2x$$

$$1 + \cos(x^2)$$

$$1 + 4x \sin(x^2)$$

$$1 - \cos(x)$$

4. $y = \frac{1}{(x-1)^2}$ which Riemann sum is $> \int_{-\infty}^{+\infty} y(x) dx$

Right

Left

Center

Trapezoidal

5. $g(x)$ is continuous from $x = -2$ to $x = 3$. It is differentiable on

$$[-2, 3]$$

$$[-2, 3)$$

$$(-2, 3]$$

$$[-2, 3]$$

6. The center Riemann sum is always an under estimation for

$$y = 4$$

$$y = 2x^2$$

$$y = -5x + 6$$

$$y = 6x - 5$$



7. $y = (x - 3)^2 + 1$. The left Riemann sum on $[3, 7]$ when rectangle width =1 is

14

18

30

31

8. $y = x^3$ What is the right Riemann sum on $[0, 9]$?
Rectangle width =2.

1300

1600

2600

3600

9. h = width of Riemann shape, A = Riemann sum.
Which is true?

$< a$

$> a$

$= a$

$= \frac{2a}{3}$

10. If $\int dg = \int dx$ then

$$\frac{dg}{dx} = 1$$

$$g(x) = 1$$

$$\frac{dg}{dx} = 0$$

$$x(g) = 1$$

