Test 4A Review #2 Name_____

Integrate each indefinite integral.

1. $\int(x^5 + 3x^3 - x + 10)dx$ 2. $\int 2(x+4)^2 dx$ 3. $\int(x+5)(x+3)dx$

4. $\int(4x^{1/4} + x^{1/3})dx$ 5. $\int(\sqrt[5]{x} + \sqrt[4]{x^3})dx$ 6. $\int \frac{x^3+2x^2+x}{2x} dx$

Approximate the area under the curve.

1. Left endpoint
2. Right endpoint
3. Average left and right
4. Trapezoid Rule
5. Integrate

7. $\int_0^1 x^2\,dx, n = 4$ 8. $\int_1^2 (lnx)\,dx, n = 4$

Use the midpoint rule

9. $\int_0^{\pi}(sinx)\,dx,\ n=3$

10.

x	0	2	4	6	8
y	10	14	16	18	17

11. Let $\int_0^2 f(x)\,dx = 12$, $\int_0^5 f(x)\,dx = 6$ and $\int_5^7 f(x)\,dx = -2$. Find each.

a. $\int_2^0 f(x)dx =$

b. $\int_0^7 (f(x)+2)dx =$

c. $\int_5^5 (lnf(x))^2\,dx =$

d. $\int_5^2 f(x)dx =$

Find the general solution and particular solution.

12. $\frac{dy}{dx} = 2x - 1,\ (0,4)$

13. $\frac{dy}{dx} = 6x^5\ \ (1,0)$

14. A ball was tossed up vertically from a height of 300 feet. The initial velocity was $50\ \frac{ft}{sec}$.

a. Find the postion and velocity equations.

b. Find the hang time.

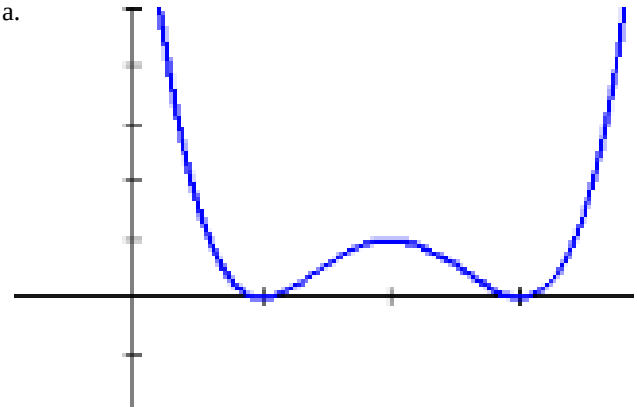
c. Find the maximum height of the ball.

d. Find the velocity at impact.

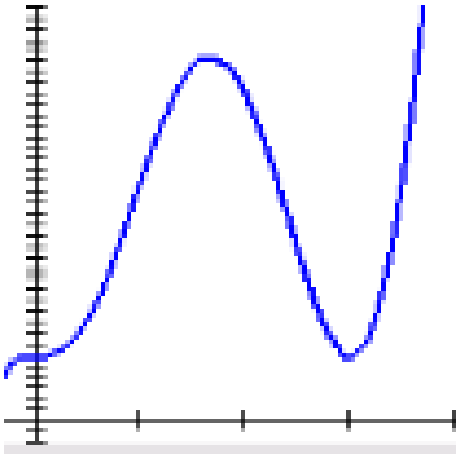
e. Find the avereage velocity.

15. Let $g(x) = \int_0^x f(t)dt$ where ***f (t)*** is the function graphed below. Graph g(x).

a.



b.



16. Find the average velocity given the velocity equation of $v(t) = lnt$ on [1, 4]. Use a calculator.

17. Find $f'(x)$ for each.

a. $f(x) = \int_{tanx}^{3} \ln(t)\, dt$

b. $f(x) = \int_{x^2}^{x^3} \cos(t)\, dt$