AP Calculus AB Chapter 5 Test 2 - Review

*Review definition of continuity
*Review how to use the trapezoid rule using a table of values.

1. If $\int_0^a \cos(x+5)\,dx$= c, then $\int_{-a}^a \cos(x+5)\,dx$ = ?

Evaluate each:

2. $\int (x^5 - 6x^2 + x - 1)dx$ 3. $\int (\sqrt{x} + \frac{1}{x^5})dx$ 4. $\int \left(1 - \frac{1}{\sqrt[3]{x^4}}\right)dx$ 5. $\int (x^3 - 4\sin x)\,dx$

6. $\int_1^4 \frac{x^3-8}{\sqrt{x}}$dx 7. $\int_0^2 (4x^3 + x - 1)dx$ 8. $\int_{-\pi}^{\pi} sinxdx$

Use u-substitution to solve.

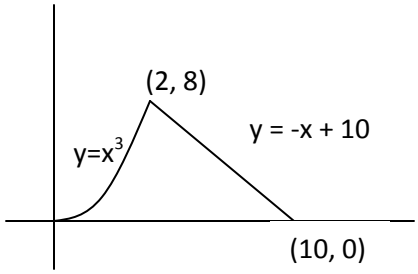
9. $\int x(x+1)^{10}$dx 10. $\int x\sqrt{x-2}\,dx$ 11. $\int (2x-5)^{\frac{2}{3}}dx$ 12. $\int sin4xdx$

13. If $\int_{-2}^{k}(4x+1)dx = 30$, find k.

Find $\frac{dy}{dx}$

14. y = $\int_1^{2x} \frac{1}{t^8}$dt 15. y = $\int_{x^2}^1 sintdt$ 16. $\int_1^{x^3} \sqrt{t^2+1}\,dt$

17. Find the area under the 2-curves shown



18. y = 6 - 2xy

a) Find $\frac{dy}{dx}$ b) Find $\frac{d^2y}{dx^2}$

19. The graph of the velocity of a particle is given by:

a) When will it have the maximum speed?
b) When is the acceleration positive?
c) What is the total distance traveled?
d) Where is the particle when t = 5?