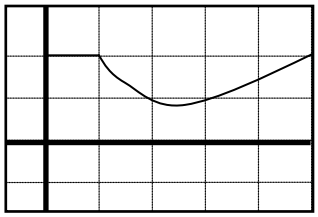
Name_____ Per_____ Date_____

Unit 10 – Integral Review #2
Do NOT Use a Calculator

1. Find all possible values of k if $\int_{-3}^{k} x^2 dx = 0$.

a) -3 b) 0 c) 3 d) -3, 3 e) -3, 0, 3



2. The graph of *f* is shown above. If $\int_{1}^{3} f(x)dx = 2.3$ and *F'(x)=f(x)*, the *F(3)-F(0)* = ?

a) 0.3 b) 1.3 c) 3.3 d) 4.3 e) 5.3

3. $\int_{1}^{4} |x-3| dx$

a) -3/2 b) 3/2 c) 5/2 d) 9/2 e) 5

4. If $\int_{2}^{4} f(x)dx = 6$ then $\int_{2}^{4} [f(x)+3]dx = ?$

a) 3 b) 6 c) 9 d) 12 e) 15

5. Let *f(x)* be a function defined by $f(x)=\begin{cases} x^2+4 & 0\le x\le 1 \\ 6-x & everywhere\,else \end{cases}$

the value of $\int_0^3 f(x)dx$ is a number between:

a) 0 and 5 b) 5 and 10 c) 10 and 15 d) 15 and 20 e) 20 and 25

6. Suppose that *f* and *g* are continuous and that

$\int_1^2 f(x)\,dx=-4,\qquad \int_1^5 f(x)\,dx=6,\qquad \int_1^5 g(x)\,dx=8.$

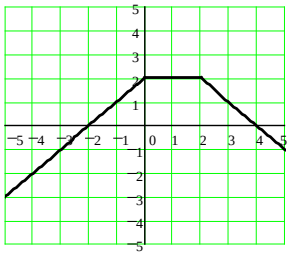
Find:

a) $\int_2^2 g(x)\,dx$ b) $\int_5^1 g(x)\,dx$

c) $\int_1^2 3f(x)\,dx$ d) $\int_2^5 f(x)\,dx$

e) $\int_1^5 \left[f(x)-g(x)\right]dx$ f) $\int_1^5 \left[4f(x)-g(x)\right]dx$

7. If f(x) has the following graph find $\int_{-3}^5 f(x)dx$



8. Approximate $\int_{-1}^5 x^2dx$ by using 3 subintervals of equal width and calculating:

a) The left sum b) The right sum

c) The midpoint sum

Answers:
1) A
2) D
3) C
4) D
5) C
6) a) 0 b) –8 c) –12 d) 10 e) –2 f) 16 7) 7
8) a)22 b) 70 c) 40