Name_____ Per_____ Date_____

Unit 5 – Integral Review #2
Do NOT Use a Calculator

1. $\int_1^2 (4x^3 - 6x)dx$

a) 2 b) 4 c) 6 d) 36 e) 42

2. $\int_1^2 \frac{1}{x^3}dx$

a) $-\frac{7}{8}$ b) $-\frac{3}{4}$ c) $\frac{15}{64}$ d) $\frac{3}{8}$ e) $\frac{15}{16}$

3. $\int_0^1 x(x^2+2)^2 dx$

a) $\frac{19}{2}$ b) $\frac{19}{3}$ c) $\frac{9}{2}$ d) $\frac{19}{6}$ e) $\frac{1}{6}$

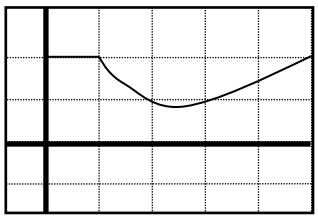
4. $\int \sin(2x+3)dx$

a) -2 cos (2x + 3) + C b) –cos (2x + 3) + C c) $-\frac{1}{2}\cos(2x+3)+C$

d) $\frac{1}{2}\cos(2x+3)+C$ e) cos (2x + 3) + C

5. 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



6. 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

7. $\int_1^4 |x-3|\,dx$

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

8. 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

9. 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

10. Given $5x^3 + 40 = \int_a^x f(t)dt$. The value of *a* is?

a) -2 b) 2 c) 1 d) -1 e) 0

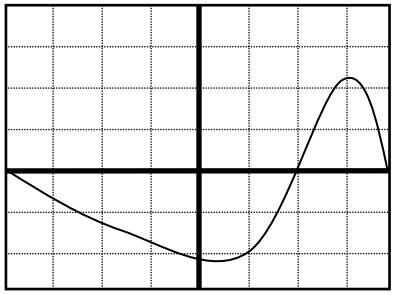
11. Suppose $G(x) = \int_0^{2x} \cos(t^2)dt$ for all real x. Then $G'(\sqrt{\pi}) = ?$

a) 2 b) 1 c) 0 d) -1 e) -2

12. If *f* and *g* are continuous functions such that *g'(x)=f(x)* for all x, then $\int_2^3 f(x)dx =$

a)g'(2) - g'(3) b) g'(3) – g'(2) c) f '(3) – f '(2) d) g(3) – g(2) e) f(3) – f(2)

13. The graph of the function *f* is shown.



If $G(x) = \int_{-4}^x f(t)dt$ for [-4, 4] which are true?

I. G is increasing on (1, 2)
II. G is decreasing on (-4, -3)
III. G(0) < 0

a) none b) II c) III

d) II and III e) I and II

Answers

1. **C**
2. **D**
3. **D**
4. **C**
5. **A**
6. **D**
7. **C**
8. **D**
9. **C**
10. **A**
11. **A**
12. **D**
13. **D**