

Exam 3 Study Guide: Part I

Find the indicated antiderivative.

1. Let $f''(x) = 3x + 2$ and assume $f'(2) = 11$ and $f(4) = 1$. Determine $f(x)$.

2. $\int \frac{3x + 5x^2 + 7}{x} dx =$

3. $\int x^3 \sqrt{x^5} dx =$

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

5. $\int \frac{5x^4}{\sqrt{x^5 - 1}} dx =$

Omit any one of the following: _____

6. $\int \frac{\sin^{-1}(x)}{\sqrt{1-x^2}} dx =$

7. $\int \frac{\sec(x)}{e^{\tan(x)} \cos(x)} dx =$

8. $\int \frac{2x-2}{x^2+1} dx =$

9. $\int x\sqrt{x-7} dx =$

Omit any one of the following: _____

10. $\int 8x^3 \sqrt{x^4 - 1} dx =$

11. $\int \frac{3}{x\sqrt{x^{10} - 1}} dx =$

12. $\int \frac{\sqrt{x}}{e^{\sqrt{x}}} dx =$

13. $\int \tan(x) \sec^2(x) dx =$

Omit any one of the following: _____

14. $\int \frac{x}{\sqrt{1-x^4}} dx$

15. $\int \frac{\ln(2x)}{x} dx =$

16. $\int \sin(x)\sqrt{1+\cos(x)} dx =$

17. $\int \frac{x}{\sqrt{x+4}} dx$

Some selected homework questions to practice

**Exam 3 Study Guide:
Part II**

1. Achieve: 5.2.2
2. Achieve: 5.2.7
3. Achieve: 5.4-5.5 # 4-6
4. Achieve: 5.4-5.5 # 8