

Name: _____

Period: _____

Date: _____

AP Calc BC

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8.1, 8.2 & 8.5 Mixed Practice

1. $\int t^3 \sqrt{t^4 + 1} dt$

2. $\int \frac{2x+3}{x^2-9} dx$

3. $\int \frac{2x}{\sqrt{1-6x}} dx$

4. $\int \frac{5x+11}{3x^2-5x-2} dx$

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

6. $\int \frac{2-x}{x^2+5x} dx$

7. $\int t \sin 2t dt$

$$8. \int \frac{x+1}{\sqrt{3x^2+6x}} dx$$

$$9. \int u^5 \ln u \, du$$

$$10. \int \frac{\sin x}{(2+3 \cos(x))^2} dx$$

$$11. \int \frac{x^3-6x-20}{x+5} dx$$

$$12. \int r e^{\frac{r}{2}} dr$$

$$13. \int \frac{x^2}{x^2+2x-3} dx$$

$$14. \int x^2 \cos x dx$$

$$15. \int x \arctan x dx$$

$$16. \int \ln(x^2 + 1) dx$$

$$17. \int \frac{3x^3 - 5x^2 - 11x + 9}{x^2 - 2x - 3} dx$$

$$18. \int e^{4x} \cos 2x dx$$

For numbers 19-23, evaluate the given definite integral.

$$19. \int_1^4 \frac{e^{\sqrt{x}}}{2\sqrt{x}} dx$$

$$20. \int_1^3 \frac{2x^2+3x-2}{x} dx$$

$$21. \int_0^1 \frac{x}{\sqrt{x+1}} dx$$

$$22. \int_0^1 x5^x dx$$

$$23. \int_1^2 \frac{\ln x}{x^2} dx$$