

2 pts. Each
No Decimals!

Name: _____KEY_____

Homework #2
Integration by Substitution

Answers

- | | | |
|-----|---|--|
| 1. | $\int 4x(2x^2 + 1)^7 dx$ | $\frac{1}{8}(2x^2 + 1)^8 + C$ |
| 2. | $\int (3x^2 - 2x + 1)(x^3 - x^2 + x)^4 dx$ | $\frac{1}{5}(x^3 - x^2 + x)^5 + C$ |
| 3. | $\int \frac{3x^2+2}{(x^3+2x)^2} dx$ | $-\frac{1}{(x^3+2x)} + C$ |
| 4. | $\int 3x^2(x^3 + 2)^{\frac{3}{2}} dx$ | $\frac{2}{5}(x^3 + 2)^{\frac{5}{2}} + C$ |
| 5. | $\int \frac{x^2}{\sqrt{x^3-1}} dx$ | $\frac{2}{3}\sqrt{x^3-1} + C$ |
| 6. | $\int (x^3 - 2x)^2(3x^2 - 2) dx$ | $\frac{1}{3}(x^3 - 2x)^3 + C$ |
| 7. | $\int \frac{4x}{(2x^2 + 3)^3} dx$ | $-\frac{1}{2(2x^2 + 3)^2} + C$ |
| 8. | $\int 3t^2 \sqrt{t^3 + 2} dt$ | $\frac{2}{3}(t^3 + 2)^{\frac{3}{2}} + C$ |
| 9. | $\int x(x^2 - 1)^9 dx$ | $\frac{1}{20}(x^2 - 1)^{10} + C$ |
| 10. | $\int_0^1 20x(2x^2 + 1)^4 dx$ | 242 |
| 11. | $\int_{-1}^0 12(x^2 - 2x)(x^3 - 3x^2 + 1)^3 dx$ | -80 |