

Extra practice for u-substitution:

Do the following integration. Use as little scratch paper as possible.

$$\int \sin(3x) dx$$

$$\int x \sin 3x^2 dx$$

$$\int x^2 \sin 3x^3 dx$$

$$\int e^{2x} dx$$

$$\int x e^{2x^2} dx$$

$$\int x^2 e^{2x^3} dx$$

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

$$\int \frac{x}{\sqrt{2-3x^2}} dx$$

$$\int \frac{x^4}{\sqrt{2-3x^5}} dx$$

$$\int \frac{7}{6x+5} dx$$

$$\int \frac{7x}{6x^2+5} dx$$

$$\int \frac{7x^8}{6x^9+5} dx$$

$$\int \frac{4}{(1+x)^2} dx$$

$$\int \frac{4x}{(1+x^2)^2} dx$$

$$\int \frac{4x^2}{(1+x^3)^2} dx$$

$$\int \sin x \sqrt[3]{7+\cos x} dx$$

$$\int x \sin x^2 \sqrt[3]{7+\cos x^2} dx$$

$$\int x^2 \sin x^3 \sqrt[3]{7+\cos x^3} dx$$

$$\int \frac{3}{1+x^2} dx$$

$$\int \frac{3x^3}{1+x^8} dx$$

$$\int \frac{3x^{19}}{1+x^{40}} dx$$

$$\int \sin x \cos x dx$$

$$\int \sin^2 x \cos x dx$$

$$\int \sin^{10} x \cos x dx$$

$$\int 3^x dx$$

$$\int 3^{2x} dx$$

$$\int x 3^{10x^2} dx$$