

Lesson 5.6

INTEGRATION BY SUBSTITUTION

Choose the most suitable **u** in the following integration to use substitution:

$$\int (x^3 + 5)^2 (x^2) dx$$

a) $(x^3 + 5)^2$

b) $x^3 + 5$

c) x^2

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

a) $2x$

b) e^{x^2}

c) x^2

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

a) x

b) $\cos x^2$

c) x^2

$$\int \frac{\sin \sqrt{x}}{\sqrt{x}} dx.$$

a) $\sqrt{x}$

b) $\sin \sqrt{x}$

c) $\frac{\sin \sqrt{x}}{\sqrt{x}}$

$$\int \frac{(\tan^{-1} x)^2}{1 + x^2} dx.$$

a) $\tan^{-1} x$

b) $\sin^{-1} x$

c) x