**9.1 Antiderivatives**

**Question:** if $y=3x^{4}+2$ then $y^{'}=$

 BUT if $y^{'}=6x^{2}$, then $y= $

**Antiderivatives –**

**Commonly Encountered Antiderivatives**

**Function Antiderivative**

0

1

$$x^{n} $$

$$\frac{1}{x}$$

$$e^{kx}$$

$$\cos(kx)$$

$$\sin(kx)$$

Find the antiderivatives:

$f\left(x\right)=4x^{3}-6x^{2}+11$ $f\left(x\right)=\cos(x-\sin(x))$

$f\left(x\right)=-3e^{-x}+6e^{2x}$ $f\left(x\right)=\frac{2}{x^{2}}-\frac{5}{x}+x$

$f\left(x\right)=\frac{6x}{3x^{2}-8}$ $y=\sin(x\cos(x ))$