

We are given that  $\sin(x) = 3\cos(x)$

What is  $\sin(x)\cos(x)$ ?

$$\sin^2(x) + \cos^2(x) = 1$$

$$\Rightarrow [3\cos(x)]^2 + \cos^2(x) = 1$$

$$\Rightarrow 9\cos^2(x) + \cos^2(x) = 1$$

$$\Rightarrow 10\cos^2(x) = 1$$

$$\Rightarrow \cos^2(x) = \frac{1}{10}$$

Now,  $\sin(x)\cos(x) = [3\cos(x)]\cos(x)$

$$= 3\cos^2(x)$$

$$= \frac{3}{10}$$