**9D The Product Rule**

1. Given that $f\left(x\right)=x^{2}\sqrt{3x-1}$, find $f'(x)$.
2. Given that $y=e^{4x}sin^{2}3x$, show that $\frac{dy}{dx}=e^{4x}sin3x\left(Acos3x+Bsin3x\right)$, where $A$ and $B$ are constants to be found.