**7C Double Angles Formulae**

*Sin2A ≡ 2SinACosA*

Key points:

If you see sin and cos multiplied together and both have the same angle -> this can be reduced using sin double angle formulae to a single trig function

Examples:

1. sinxcosx =
2. 6cosxsinx =
3. 5sin3xcos3x =

*Cos2A ≡ Co*$s^{2}A -Sin^{2}A$

Key points:

If you see $Sin^{2}A$ or $Cos^{2}A$ this can be reduced using the cos double angle formulae to a single trig function

Examples:

1. $Sin^{2}x$ =
2. $4Cos^{2}x$ =
3. $3Sin^{2}4x$ =

*Tan 2A* $≡\frac{2TanA}{1-Tan^{2}A}$

1. Use the double angle formulae to write the following expression as a single trigonometric ratio:
2. $Cos^{2}50-Sin^{2}50$
3. $\frac{2tan\frac{π}{6}}{1-tan^{2}\frac{π}{6}}$
4. $\frac{4sin70}{sec70}$
5. Given that $x=3sinθ$ and $y=3-4cos2θ$, eliminate $θ$ and express $y$ in terms of $x$.
6. Given that:

$$cosx=\frac{3}{4} , 180˚<x<360˚$$

Find the exact value of:

1. $sin2x$
2. $tan2x$