**3C Differentiating Inverse Trig Functions**

1. Show that $\frac{d}{dx}\left(arcsinx\right)=\frac{1}{\sqrt{1-x^{2}}}$
2. $\frac{d}{dx}\left(arccosx\right)=-\frac{1}{\sqrt{1-x^{2}}}$
3. Find $\frac{d}{dx}\left(arctanx\right)$
4. Given $y=arcsinx^{2}$, find $\frac{dy}{dx}$
5. Using implicit differentiation
6. Using the chain rule and the formula for $\frac{d}{dx}(arcsinx)$

A Key point on the chain rule above: don’t just multiply by the derivative! (as x does not remain x in the derivative)

1. Given $y=arctan\left(\frac{1-x}{1+x}\right)$, find $\frac{dy}{dx}$
2. Show that

$$sin\left(arccosx\right)=\sqrt{1-x^{2}}$$