

Math 115 – Identities

(For preparation only. Not allowed on the exam.)

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

$$(2) \qquad 1 + \tan^2 x = \sec^2 x$$

$$(3) \qquad 1 + \cot^2 x = \csc^2 x$$

$$(4) \qquad \sin 2x = 2 \sin x \cos x$$

$$(5) \qquad \cos 2x = \cos^2 x - \sin^2 x$$

$$(6) \qquad \cos^2 x = \frac{1}{2}(1 + \cos 2x)$$

$$(7) \qquad \sin^2 x = \frac{1}{2}(1 - \cos 2x)$$

$$(8) \qquad \cosh^2 x - \sinh^2 x = 1$$

$$(9) \qquad 1 - \tanh^2 x = \operatorname{sech}^2 x$$

$$(10) \qquad \coth^2 x - 1 = \operatorname{csch}^2 x$$