4-17-18 1st Trig

10 minutes left... long quiz

$\sin(\alpha + \beta)$

$\sin(\alpha+\beta) = \sin\alpha\cdot\cos\beta + \sin\beta\cdot\cos\alpha$

$\sin\theta\cdot\cos\theta + \sin\theta\cdot\cos\theta$

$2\cdot\sin\theta\cdot\cos\theta$

$\sin(2\theta) = 2\cdot\sin\theta\cdot\cos\theta$

$\cos(\alpha + \beta) =$

$\cos(\alpha+\beta) = \cos\alpha\cdot\cos\beta - \sin\alpha\cdot\sin\beta$

$\cos\theta\cdot\cos\theta - \sin\theta\cdot\sin\theta$

$\boxed{\cos(2\theta) = \cos^2\theta - \sin^2\theta}$

sub this in there

$\cos^2\theta = \boxed{1 - \sin^2\theta}$

$\cos(2\theta) = 1 - \sin^2\theta - \sin^2\theta$

$\boxed{\cos(2\theta) = 1 - 2\sin^2\theta}$

$\cos(2\theta) = \cos^2\theta - \sin^2\theta$

$\sin^2\theta = \boxed{1 - \cos^2\theta}$ sub in there

$\cos(2\theta) = \cos^2\theta - (1 - \cos^2\theta)$

$\cos^2\theta - 1 + \cos^2\theta$

$\boxed{\cos(2\theta) = 2\cos^2\theta - 1}$

4-17-18 3rd Trig

Double Angles

$\sin(2\theta)$

$\sin(\theta + \theta)$

$\sin(\alpha+\beta) = \sin\alpha\cdot\cos\beta + \sin\beta\cdot\cos\alpha$

$= \sin\theta\cdot\cos\theta + \sin\theta\cdot\cos\theta$

$$\boxed{\sin(2\theta) = 2\sin\theta\cdot\cos\theta}$$

$\cos(2\theta)$

$\cos(\theta+\theta)$

$\cos(\alpha+\beta) = \cos\alpha\cdot\cos\beta - \sin\alpha\cdot\sin\beta$

$\cos\theta\cdot\cos\theta - \sin\theta\cdot\sin\theta$

$$\boxed{\cos(2\theta) = \cos^2\theta - \sin^2\theta}$$

$\cos^2\theta = 1 - \sin^2\theta$

$1 - \sin^2\theta - \sin^2\theta$

$$\boxed{\cos(2\theta) = 1 - 2\sin^2\theta}$$

$\sin^2\theta = 1 - \cos^2\theta$

$\cos(2\theta) = \cos^2\theta - \sin^2\theta$

$= \cos^2\theta - (1 - \cos^2\theta)$

$= \cos^2\theta - 1 + \cos^2\theta$

$= 2\cos^2\theta - 1$

4-17-18 4th Trig

Double Angle

$\sin(2\theta) = \sin(\theta+\theta)$

$\sin(\alpha+\beta) = \sin\alpha\cdot\cos\beta + \sin\beta\cdot\cos\alpha$

$= \sin\theta\cdot\cos\theta + \sin\theta\cdot\cos\theta$

$$\boxed{\sin(2\theta) = 2\cdot\sin\theta\cdot\cos\theta}$$

$\cos(\theta+\theta)$

$\cos(\alpha+\beta) = \cos\alpha\cdot\cos\beta - \sin\alpha\cdot\sin\beta$

$= \cos\theta\cdot\cos\theta - \sin\theta\cdot\sin\theta$

$$\boxed{\cos(2\theta) = \cos^2\theta - \sin^2\theta}$$

sub in

$\cos^2\theta = 1 - \sin^2\theta$

$\cos(2\theta) = 1 - \sin^2\theta - \sin^2\theta$

$$\boxed{\cos(2\theta) = 1 - 2\sin^2\theta}$$

$\cos(2\theta) = \cos^2\theta - \sin^2\theta$

$\sin^2\theta = 1 - \cos^2\theta$

$\cos(2\theta) = \cos^2\theta - (1 - \cos^2\theta)$

$= \cos^2\theta - 1 + \cos^2\theta$

$$\boxed{\cos(2\theta) = 2\cos^2\theta - 1}$$