Identities Test

2/ $\cos^3\theta \csc^3\theta \tan^3\theta = \csc^2\theta - \cot^2\theta$

LS

$\cos^3\theta \left(\frac{1}{\sin^3\theta}\right)\left(\frac{\sin^3\theta}{\cos^3\theta}\right)$

$= 1$

RS

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

1

8/ $\frac{2\cos\theta}{\csc\theta} = \sin 3\theta \cos\theta - \cos 3\theta \sin\theta$

$\sin(3\theta - \theta)$

$\sin 2\theta$

$2\sin\theta\cos\theta$

$\frac{2\cos\theta}{\csc\theta}$

LS = RS

7/ $\frac{1 - \tan^2 x}{\sec^2 x} = \cos 2x$

LS

$(1 - \tan^2 x)\cos^2 x$

$\cos^2 x - \tan^2 x \cos^2 x$

$\cos^2 x - \frac{\sin^2 x}{\cos^2 x}\cos^2 x$

RS

$\cos^2 x - \sin^2 x$

9/ $\sin^2 A - \cos^2 A \sin^2 A = \tan^4 A \cos^4 A$

LS

$\sin^2 A(1 - \cos^2 A)$

$\sin^2 A \sin^2 A$

$\sin^4 A$

RS

$\frac{\sin^4 A}{\cos^4 A}\cos^4 A$

10/ $\frac{1+\sin\theta-\cos^2\theta}{\cos\theta+\cos\theta\sin\theta} = \frac{1}{\cot\theta}$

$\Leftrightarrow$

$\frac{\sin^2\theta+\sin\theta}{\cos\theta+\cos\theta\sin\theta}$

$\frac{\sin\theta(\sin\theta+1)}{\cos\theta(1+\sin\theta)}$

$\tan\theta$

$\frac{1}{\cot\theta}$

11/ $\cos(A+B)\cos(A-B) = \cos^2A+\cos^2B-1$

$(\cos A\cos B-\sin A\sin B)(\cos A\cos B+\sin A\sin B)$

$\cos^2A\cos^2B-\sin^2A\sin^2B$

$\cos^2A\cos^2B-(1-\cos^2A)(1-\cos^2B)$

$\cos^2A\cos^2B-(1-\cos^2B-\cos^2A+\cos^2A\cos^2B)$

$\cos^2A+\cos^2B-1$

- Exam ⇒ 30 m/choice
- Open Response: 70 marks

⇒ Solve Equations

1) Trig. Equations
2) Exponential Equation
3) Logarithmic Equation

⇒ Special Angles (Radians)

⇒ Application of Trig. Graph

⇒ Sketching Trig. function completing chart

⇒ Angular Velocity

⇒ Laws of logarithms

⇒ 2 Trig. Proofs

⇒ Application of a trig Equation

⇒ Word Problem ⇒ Exponential function

Avg. Daily Temp.

$$\underbrace{h(t)}_{\text{Day}} = 9\cos\frac{2\pi}{365}(t-200) + 14$$

$h(t) = 12\sin\frac{\pi}{45}(t-30)+15$ height above ground at time t

Determine when the person is at a height of 20m above the ground in the first 2 minutes.

$$20 = 12\sin\frac{\pi}{45}(t-30)+15$$

$$\frac{5}{12} = \frac{12\sin\left[\frac{\pi}{45}(t-30)\right]}{12}$$

$$\frac{5}{12} = \sin\left[\frac{\pi}{45}(t-30)\right]$$

$$\sin^{-1}\left(\frac{5}{12}\right) = \sin^{-1}\left(\sin\frac{\pi}{45}(t-30)\right)$$

$$\sin^{-1}\frac{5}{12} = \frac{\pi}{45}(t-30)$$

$\sin^{-1}\frac{5}{12}$ (Ref $\measuredangle$ 0.43, Q 1,2)

$\theta = 0.43$ or $\pi - 0.43$

2.71

$\pi-\theta$	θ
x	x
$\pi+\theta$	$2\pi-\theta$

$0.43 = \frac{\pi}{45}(t-30)$

$\frac{19.35}{\pi} = \frac{\pi(t-30)}{\pi}$

$6.16 = t-30$

$t = 36.16$ sec

$+90$

Too big >120 sec

Period??

$2.71 = \frac{\pi}{45}(t-30)$

$121.95 = \pi(t-30)$

$38.8 = t-30$

$t = 68.8$ sec

$+90$ sec

>120 sec

Too big

$Per = \frac{2\pi}{k}$

$Per = \frac{2\pi}{\frac{\pi}{45}}$

$Per = 2\pi\left(\frac{45}{\pi}\right)$

$= 90$ sec

Radians

$$\theta = \frac{a}{r} \qquad V_A = \frac{\theta}{t}$$