

## Identities Test

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

$$\begin{array}{l} \cos^3 \theta \left( \frac{1}{\sin^3 \theta} \right) \left( \frac{\sin^3 \theta}{\cos^3 \theta} \right) \quad \text{L.S.} \\ = 1 \end{array} \quad \begin{array}{l} \text{R.S.} \\ 1 + \cot^2 \theta - \cot^2 \theta \\ = 1 \end{array}$$

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

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

$$\sin 2\theta$$

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

$$2 \cos \theta$$

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

$$\text{L.S.} = \text{R.S.}$$

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

$$(1 - \tan^2 x) \cos^2 x \quad \text{L.S.}$$

$$\cos^2 x - \sin^2 x \quad \text{R.S.}$$

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

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

$$5/ \sin^2 A - \cos^2 A \sin^2 A = \tan^4 A \cos^4 A$$

$$\sin^2 A (1 - \cos^2 A) \quad \text{L.S.}$$

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

$$\sin^4 A$$

$$\frac{\sin^4 A}{\cos^4 A} \cos^4 A \quad \text{R.S.}$$

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

$$\stackrel{\text{LS}}{\frac{\sin^2\theta + \sin\theta}{\cos\theta + \cos\theta\sin\theta}}$$

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

$$\frac{\sin\theta}{\cos\theta}$$

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

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

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

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

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

$$\underline{\cos^2A + \cos^2B - 1}$$

{ Exam  $\Rightarrow$  30 m/choice  
{ Open Response: 70 marks

$\Rightarrow$  Solve Equations

1) Trig. Equations

2) Exponential Equation

3) Logarithmic Equation

$\Rightarrow$  Special Angles (Radians)

$\Rightarrow$  Application of Trig. Graph

$\Rightarrow$  Sketching Trig. function  
completing chart

$\Rightarrow$  Angular Velocity

$\Rightarrow$  Laws of logarithms

$\Rightarrow$  2 Trig. Proofs

$\Rightarrow$  Application of a trig Equation

$\Rightarrow$  Word Problem  $\Rightarrow$  Exponential function

Aug. Daily Temp.

$$\underbrace{h(t)}_{\text{Day}} = 9.05 \frac{2\pi}{365} (t - 200) + 14$$

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

height above ground at time  $t$

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

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

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

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

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

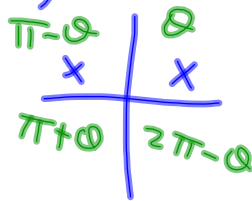
$$\sin^{-1} \frac{5}{12} = \frac{\pi}{45} (t-30)$$

$$\sin^{-1} \frac{5}{12}$$

(Ref 2.43, Q 1, 2)

$$\theta = 0.43 \text{ or } \pi - 0.43$$

2.71



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

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

$$6.18 = t-30$$

$$t = 36.16 \text{ sec}$$

$$+90$$

Too big > 120 sec

Period??

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

$$121.75 = \pi (t-30)$$

$$38.8 = t-30$$

$$t = 68.8 \text{ sec}$$

$$+90 \text{ sec}$$

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

$$> 120 \text{ sec}$$

Too big

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

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

$$= 90 \text{ sec}$$

$$\theta = \frac{a}{r} \quad \text{Radians} \quad V_A = \frac{\theta}{t}$$