The skills in this series of worksheets appear frequently.

These are the GIFTS you must take to succeed

Proving Trigonometric Identities   **(Non Calculator)**
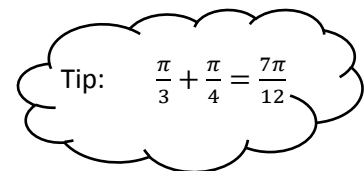
Prove that:

1. $tanA - tanB = \frac{sin(A-B)}{cosAcosB}$

2. $(sinA + cosA)^2 = 1 + sin2A$

3. $sin3A = 3sinA - 4sin^3A$

4. $cos3A = 4cos^3A - 3cosA$

5. $(cosA + cosB)^2 + (sinA - sinB)^2 = 2(1 + cos(A+B))$

6. $sin^2A = \frac{1}{2}(1 - cos2A)$

7. $cos^2A = \frac{1}{2}(1 + cos2A)$

8. $(cosA + sinA)(cosA - sinA) = cos2A$

9. $\frac{sin(A-B)}{cosAcosB} = tanA - tanB$

10. $cos(A - B) - cos(A + B) = 2sinAsinB$

APPLYING QUESTIONS

1. (a) Prove that: $\frac{cos(A+B)}{cosAcosB} = 1 - tanAtanB$

   (b) Hence evaluate $\frac{cos(\frac{7\pi}{12})}{cos\frac{\pi}{3}cos\frac{\pi}{4}}$

   Tip: $\frac{\pi}{3} + \frac{\pi}{4} = \frac{7\pi}{12}$

2. (a) Show that: $cos(A + B) cos(A - B) = cos^2B - sin^2A$

   (b) Hence evaluate: $cos\left(\frac{\pi}{6} + \frac{\pi}{4}\right) cos\left(\frac{\pi}{6} - \frac{\pi}{4}\right)$