Practice – 2

Once you feel confident with sum and difference and double angle identities, complete problems 1 to 4. Check your answers by going to the Solutions tab in Moodle.

Instructions: Answer each of the following practice questions on a separate piece of paper. Step by step solutions are provided under the Solutions tab. You will learn the material more thoroughly if you complete the questions before checking the answers.

1. Write each of the following expressions as a single trigonometric ratio.

    a. $\cos\left(\frac{5\pi}{6}\right)\cos\left(\frac{\pi}{3}\right)+\sin\left(\frac{5\pi}{6}\right)\sin\left(\frac{\pi}{3}\right)$

    b. $2\sin\frac{\pi}{3}\cos\frac{\pi}{3}$

    c. $12\cos^2\theta-6$

2. Use exact values to show $\sin\frac{\pi}{12}=\frac{\sqrt{6}-\sqrt{2}}{4}$.

3. Expand $\tan\left(\frac{\pi}{6}+\frac{\pi}{6}\right)$ to verify $\tan\frac{\pi}{3}=\sqrt{3}$.

4. Simplify the expression $\frac{\sin(A+B)}{\cos A\cos B}$.