1. See Exam 01 review sheet & solutions.

2. See Exam 01.

3. See Exam 02 review sheet & solutions.

4. See Exam 02.

Section 5.1

5. Verify each of the following identities.

a. $\csc x - \csc x \cos^2 x = \sin x$

b. $\dfrac{\tan^2 t}{\sec t} = \sec t - \cos t$

c. $(\tan^2 \theta + 1)(\cos^2 \theta + 1) = \tan^2 \theta + 2$

Section 5.2

6. Use the Angle Sum/Difference formulas to find the exact value of the expression.

a. $\cos(75^\circ)$

b. $\sin(-105^\circ)$

c. $\sin\left(\dfrac{\pi}{8}\right)\cos\left(\dfrac{\pi}{8}\right) + \cos\left(\dfrac{\pi}{8}\right)\sin\left(\dfrac{\pi}{8}\right)$

d. $\cos\left(\dfrac{11\pi}{12}\right)\cos\left(\dfrac{\pi}{6}\right) + \sin\left(\dfrac{11\pi}{12}\right)\sin\left(\dfrac{\pi}{6}\right)$

Section 5.3

7. Use the Double-Angle formulas to find the exact value of the expression.

a. $\sin(60^\circ)$

b. $\cos^2\left(-\dfrac{7\pi}{12}\right) - \sin^2\left(-\dfrac{7\pi}{12}\right)$

c. $\sin(165^\circ)\cos(165^\circ)$

d. $1 - 2\sin^2\left(\frac{\pi}{8}\right)$

8. Use the Power-Reducing formulas to find the exact value of the expression.

a. $\sin^2(30^\circ)$

b. $\sin^2(30^\circ)\cos^2(75^\circ)$

c. $\tan^2\left(\dfrac{\pi}{4}\right)$

d. $\cos^4(15^\circ)$

9. Use the Half-Angle formulas to find the exact value of the expression.

a. $\sin(15^\circ) - \sin(75^\circ)$

b. $\tan(15^\circ)$

c. $\cos\left(\dfrac{\pi}{12}\right)\sin\left(\dfrac{5\pi}{12}\right)$

d. $\sin\left(\dfrac{\pi}{16}\right)$

Section 5.4

10. Use the Product-to-Sum formulas to find the exact value of the expression.

a. $\sin\left(-\frac{\pi}{12}\right)\sin\left(\frac{\pi}{12}\right)$

b. $\cos(15°)\cos(45°)$

c. $\sin\left(\frac{\pi}{12}\right)\cos\left(\frac{\pi}{12}\right)$

d. $\cos^2(15°)\sin(-135°)$

11. Use the Sum-to-Product formulas to find the exact value of the expression.

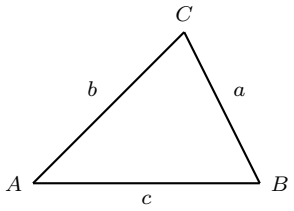
a. $\sin(75°)+\sin(15°)$

b. $\cos(75°)-\cos(15°)$

c. $\sin\left(\frac{\pi}{12}\right)-\sin\left(\frac{5\pi}{12}\right)$

d. $\cos\left(\frac{\pi}{4}\right)+\cos\left(\frac{\pi}{4}\right)$

Sections 6.1 and 6.2 use the triangle below.



Section 6.1

12. Use the Law of Sines to solve the following triangles. Round to two decimal places.

a. $a = 16$, $B = 80°$, $C = 34°$

b. $a = 12$, $b = 10$, $A = 105$

Section 6.1

13. Use the Law of Cosines to solve the following triangles. Round to two decimal places.

a. $a = 19$, $b = 26$, $C = 42°$

b. $a = 20$, $b = 30$, $c = 40$