

These exercises illustrate a trigonometric identity that we have not yet studied.

The identity  $\cos(A+B) = \cos(A) \cos(B) - \sin(A) \sin(B)$  is true for all values of angles A and B.

You are asked to calculate both sides of each identity. You should get the same answer both ways. After you are done, use your calculator to calculate both sides. The answers should still be the same.

Remember:  $\cos(\pi/6) = \sqrt{3}/2$ ,  $\sin(\pi/6) = (1/2)$ ,  $\cos(\pi/4) = \sqrt{2}/2$ , etc. You should be able to calculate all of those as in HW#17.

		$\cos(A+B)$	$\cos(A) \cos(B) - \sin(A) \sin(B)$
1	A = $\pi/2$ B = $\pi/2$ (example)	$\cos(\pi/2 + \pi/2) = \cos(2\pi/2) = \cos(\pi) = -1$	$\cos(\pi/2) \cos(\pi/2) - \sin(\pi/2) \sin(\pi/2)$ $= (0)(0) - (1)(1) = -1.$
2	A = $\pi/2$ B = $\pi$		
3	A = $\pi/4$ B = $\pi/4$		
4	A = $\pi/6$ B = $\pi/3$		
5	A = $\pi/6$ B = $\pi/6$		
6	A = $\pi/6$ B = $-\pi/3$		
7	A = $\pi/4$ B = $-\pi/4$		
8	A = $\pi/3$ B = $\pi/3$		
9	A = $\pi/4$ B = $3\pi/4$		