

Name : _____

Sum-to-Product Identity

Sheet 1

Write each sum or difference as a product.

1) $\sin 81^\circ - \sin (-64^\circ)$

2) $3(\cos 6x - \cos 2x)$

3) $-6(\cos 16x + \cos 22x)$

4) $\sin 11^\circ + \sin 3^\circ$

5) $\cos 14x - \cos 7x$

6) $\sin \frac{13\pi}{45} - \sin \frac{\pi}{5}$

Name : _____

Answer key

Sheet 1

Sum-to-Product Identity

Write each sum or difference as a product.

1) $\sin 81^\circ - \sin (-64^\circ)$

$$2 \cos \frac{17^\circ}{2} \sin \frac{145^\circ}{2}$$

2) $3(\cos 6x - \cos 2x)$

$$-6 \sin 4x \sin 2x$$

3) $-6(\cos 16x + \cos 22x)$

$$-12 \cos 19x \cos 3x$$

4) $\sin 11^\circ + \sin 3^\circ$

$$2 \sin 7^\circ \cos 4^\circ$$

5) $\cos 14x - \cos 7x$

$$-2 \sin \frac{21x}{2} \sin \frac{7x}{2}$$

6) $\sin \frac{13\pi}{45} - \sin \frac{\pi}{5}$

$$2 \cos \frac{11\pi}{45} \sin \frac{2\pi}{45}$$