

Unit 6: Trig Identities and Equations

Lesson 3: Sum and Difference Formulas

Answers p. 408 (odd) #19 – 27

$$19. \cos 40^\circ \cos 15^\circ - \sin 40^\circ \sin 15^\circ = \cos(40^\circ + 15^\circ) = \cos 55^\circ$$

$$21. \sin 340^\circ \cos 50^\circ - \cos 340^\circ \sin 50^\circ = \sin(340^\circ - 50^\circ) = \sin 290^\circ$$

$$23. \frac{\tan 325^\circ - \tan 86^\circ}{1 + \tan 325^\circ \tan 86^\circ} = \tan(325^\circ - 86^\circ) = \tan 239^\circ$$

$$25. \sin 3 \cos 1.2 - \cos 3 \sin 1.2 = \sin(3 - 1.2) = \sin 1.8$$

$$27. \cos \frac{\pi}{7} \cos \frac{\pi}{5} - \sin \frac{\pi}{7} \sin \frac{\pi}{5} = \cos\left(\frac{\pi}{7} + \frac{\pi}{5}\right) \\ = \cos \frac{12\pi}{35}$$

Answers p. 408 (even) #20 - 28

$$20. \sin 110^\circ \cos 80^\circ + \cos 110^\circ \sin 80^\circ = \sin(110^\circ + 80^\circ) = \sin(190^\circ)$$

$$22. \cos 20^\circ \cos 30^\circ + \sin 20^\circ \sin 30^\circ = \cos(30^\circ - 20^\circ) \\ = \cos 10^\circ$$

$$24. \frac{\tan 140^\circ - \tan 60^\circ}{1 + \tan 140^\circ \tan 60^\circ} = \tan(140^\circ - 60^\circ) = \tan 80^\circ$$

$$26. \cos 0.88 \cos 0.34 + \sin 0.88 \sin 0.34 = \cos(0.88 - 0.34) = \cos(0.54)$$

$$28. \sin \frac{2\pi}{9} \cos \frac{\pi}{10} + \cos \frac{2\pi}{9} \sin \frac{\pi}{10} = \sin\left(\frac{2\pi}{9} + \frac{\pi}{10}\right) = \sin\left(\frac{29\pi}{90}\right)$$