

## Week 6 Practice: Ref. Ch. 5-2 and 5-3

Date \_\_\_\_\_ Period \_\_\_\_\_

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**Use the angle sum or difference identity to find the exact value of each.**

1)  $\cos -15^\circ$

2)  $\cos 255^\circ$

3)  $\tan \frac{11\pi}{12}$

4)  $\tan 195^\circ$

5)  $\sin 285^\circ$

6)  $\cos 15^\circ$

7)  $\tan 15^\circ$

8)  $\tan 75^\circ$

9)  $\tan \frac{7\pi}{12}$

10)  $\sin \frac{7\pi}{12}$

11)  $\sin \frac{13\pi}{12}$

12)  $\sin \frac{5\pi}{12}$

13)  $\cos -\frac{7\pi}{12}$

14)  $\sin -75^\circ$

15)  $\sin -\frac{7\pi}{12}$

16)  $\sin 15^\circ$

17)  $\cos \frac{17\pi}{12}$

18)  $\tan \frac{7\pi}{12}$

19)  $\sin -\frac{5\pi}{12}$

20)  $\tan -105^\circ$

**Use a double-angle or half-angle identity to find the exact value of each expression.**

21)  $\tan 120^\circ$

22)  $\tan 22\frac{1}{2}^\circ$

23)  $\tan \frac{5\pi}{6}$

24)  $\tan 150^\circ$

25)  $\tan \pi$

26)  $\cos 15^\circ$

27)  $\cos \frac{2\pi}{3}$

28)  $\sin 157\frac{1}{2}^\circ$

29)  $\cos 157\frac{1}{2}^\circ$

30)  $\tan 60^\circ$

31)  $\sin \frac{\pi}{3}$

32)  $\tan \frac{\pi}{3}$

33)  $\cos \theta = \frac{7}{10}$  and  $0^\circ < \theta < 90^\circ$

34)  $\tan \theta = \frac{5}{12}$  and  $0 < \theta < \frac{\pi}{2}$

Find  $\tan \frac{\theta}{2}$

Find  $\tan 2\theta$

35)  $\tan \theta = \frac{3}{4}$  and  $180^\circ < \theta < 270^\circ$

36)  $\tan \theta = -\frac{5\sqrt{6}}{24}$  and  $\frac{3\pi}{2} < \theta < 2\pi$

Find  $\cos \frac{\theta}{2}$

Find  $\cos \frac{\theta}{2}$

37)  $\cos \theta = \frac{24}{25}$  and  $270^\circ < \theta < 360^\circ$

38)  $\tan \theta = -\frac{2\sqrt{3}}{3}$  and  $270^\circ < \theta < 360^\circ$

Find  $\tan 2\theta$

Find  $\tan 2\theta$

39)  $\cos \theta = \frac{4}{19}$  and  $\frac{3\pi}{2} < \theta < 2\pi$

40)  $\tan \theta = -\frac{3}{4}$  and  $90^\circ < \theta < 180^\circ$

Find  $\tan 2\theta$

Find  $\tan 2\theta$

41)  $\cos \theta = \frac{12}{13}$  and  $0 < \theta < \frac{\pi}{2}$

42)  $\tan \theta = -2\sqrt{2}$  and  $\frac{3\pi}{2} < \theta < 2\pi$

Find  $\tan \frac{\theta}{2}$

Find  $\sin \frac{\theta}{2}$

43)  $\tan \theta = \frac{3}{4}$  and  $0^\circ < \theta < 90^\circ$

44)  $\cos \theta = \frac{20}{21}$  and  $270^\circ < \theta < 360^\circ$

Find  $\tan \frac{\theta}{2}$

Find  $\cos 2\theta$

45)  $\cos \theta = \frac{4}{5}$  and  $\frac{3\pi}{2} < \theta < 2\pi$

46)  $\cos \theta = -\frac{12}{13}$  and  $\pi < \theta < \frac{3\pi}{2}$

Find  $\cos \frac{\theta}{2}$

Find  $\tan 2\theta$

47)  $\cos \theta = -\frac{\sqrt{3}}{2}$  and  $90^\circ < \theta < 180^\circ$

48)  $\sin \theta = \frac{\sqrt{2}}{6}$  and  $\frac{\pi}{2} < \theta < \pi$

Find  $\sin 2\theta$

Find  $\tan 2\theta$

Answers to Week 6 Practice: Ref. Ch. 5-2 and 5-3 (ID: 1)

$$1) \frac{\sqrt{6} + \sqrt{2}}{4}$$

$$2) \frac{\sqrt{2} - \sqrt{6}}{4}$$

$$3) \sqrt{3} - 2$$

$$4) 2 - \sqrt{3}$$

$$5) \frac{-\sqrt{6} - \sqrt{2}}{4}$$

$$6) \frac{\sqrt{6} + \sqrt{2}}{4}$$

$$7) 2 - \sqrt{3}$$

$$8) 2 + \sqrt{3}$$

$$9) -2 - \sqrt{3}$$

$$10) \frac{\sqrt{6} + \sqrt{2}}{4}$$

$$11) \frac{\sqrt{2} - \sqrt{6}}{4}$$

$$12) \frac{\sqrt{6} + \sqrt{2}}{4}$$

$$13) \frac{\sqrt{2} - \sqrt{6}}{4}$$

$$14) \frac{-\sqrt{6} - \sqrt{2}}{4}$$

$$15) \frac{-\sqrt{6} - \sqrt{2}}{4}$$

$$16) \frac{\sqrt{6} - \sqrt{2}}{4}$$

$$17) \frac{\sqrt{2} - \sqrt{6}}{4}$$

$$18) -2 - \sqrt{3}$$

$$19) \frac{-\sqrt{6} - \sqrt{2}}{4}$$

$$20) 2 + \sqrt{3}$$

$$21) -\sqrt{3}$$

$$22) \sqrt{3 - 2\sqrt{2}}$$

$$23) -\frac{\sqrt{3}}{3}$$

$$24) -\frac{\sqrt{3}}{3}$$

$$25) 0$$

$$26) \frac{\sqrt{6} + \sqrt{2}}{4}$$

$$27) -\frac{1}{2}$$

$$28) \frac{\sqrt{2} - \sqrt{2}}{2}$$

$$29) -\frac{\sqrt{2 + \sqrt{2}}}{2}$$

$$30) \sqrt{3}$$

$$31) \frac{\sqrt{3}}{2}$$

$$32) \sqrt{3}$$

$$33) \frac{\sqrt{51}}{17}$$

$$34) \frac{120}{119}$$

$$35) -\frac{\sqrt{10}}{10}$$

$$36) -\frac{\sqrt{242 + 88\sqrt{6}}}{22}$$

$$37) -\frac{336}{527}$$

$$38) 4\sqrt{3}$$

$$39) \frac{8\sqrt{345}}{329}$$

$$40) -\frac{24}{7}$$

$$41) \frac{1}{5}$$

$$42) \frac{\sqrt{3}}{3}$$

$$43) \frac{1}{3}$$

$$44) \frac{359}{441}$$

$$45) -\frac{3\sqrt{10}}{10}$$

$$46) \frac{120}{119}$$

$$47) -\frac{\sqrt{3}}{2}$$

$$48) -\frac{\sqrt{17}}{8}$$