

6.4 The Unit Circle – Homework Day 2

Set up a reference triangle to answer the following questions.

1) $\csc 30^\circ$

$$= 2$$

2) $\sin 120^\circ$

$$= \frac{\sqrt{3}}{2}$$

3) $\cot(-90^\circ)$

$$\text{und}$$

4) $\sec 270^\circ$

$$\text{und}$$

5) $\cos 390^\circ$

$$= \frac{\sqrt{3}}{2}$$

6) $\tan 405^\circ$

$$= 1$$

7) $\csc 510^\circ$

$$= 2$$

8) $\sin 240^\circ$

$$= -\frac{\sqrt{3}}{2}$$

9) $\sec 540^\circ$

$$= -1$$

10) $\cot 120^\circ$

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

11) $\cos(-300^\circ)$

$$= \frac{1}{2}$$

12) $\tan 315^\circ$

$$= -1$$

13) $\cot(-135^\circ)$

$$= 1$$

14) $\tan 330^\circ$

$$= -\frac{\sqrt{3}}{3}$$

15) $\cos 180^\circ$

$$= -1$$

16) $\csc 90^\circ$

$$= 1$$

17) $\sin 570^\circ$

$$= -\frac{1}{2}$$

18) $\sec 675^\circ$

$$= \sqrt{2}$$

19) $\tan(-210^\circ)$

$$= -\frac{\sqrt{3}}{3}$$

20) $\csc 270^\circ$

$$= -1$$

21) $\sin(-135^\circ)$

$$= -\frac{\sqrt{2}}{2}$$

22) $\sin 630^\circ$

$$= -1$$

23) $\cos(-150^\circ)$

$$= -\frac{\sqrt{3}}{2}$$

24) $\sec 240^\circ$

$$= -2$$

25) $\sec 420^\circ$

$$= 2$$

26) $\tan(-120^\circ)$

$$= \sqrt{3}$$

27) $\csc(-60^\circ)$

$$= -\frac{2}{\sqrt{3}} = -\frac{2\sqrt{3}}{3}$$

28) $\cos(-135^\circ)$

$$= -\frac{\sqrt{2}}{2}$$

29) $\cot 585^\circ$

$$= 1$$

30) $\cos 270^\circ$

$$= 0$$

31) $\sec 540^\circ$

$$= -1$$

32) $\cos 90^\circ$

$$= 0$$

33) $\cot(-120^\circ) + \tan 210^\circ$

$$= \frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$$

34) $\sec 225^\circ - 3\csc 135^\circ$

$$= -\sqrt{2} - 3 \cdot \sqrt{2} \\ = -4\sqrt{2}$$

35) $\sin(-60^\circ) + \cos 240^\circ$

$$= \frac{\sqrt{3}}{2} + \frac{-1}{2} \\ = \frac{-1 - \sqrt{3}}{2}$$

36) $\tan 135^\circ \sec 135^\circ$

$$= -1 \cdot \frac{-2}{\sqrt{2}} \\ = \frac{2}{\sqrt{2}} = \sqrt{2}$$

37) $16(\sin 225^\circ)(\cos 315^\circ)$

$$= 16 \cdot \frac{-\sqrt{2}}{2} \cdot \frac{\sqrt{2}}{2} \\ = -8$$

38) $\cos 150^\circ \sin 45^\circ - \sin 225^\circ \cos 330^\circ$

$$= \frac{-\sqrt{3}}{2} \cdot \frac{\sqrt{2}}{2} + \frac{+\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{2} \\ = 0$$

39) $6\cos(60^\circ) + \sin 90^\circ$

$$= 6 \cdot \frac{1}{2} + 1 \\ = 4$$

40) $2\csc(210^\circ)\sin(330^\circ)$

$$= 2 \cdot -2 \cdot \frac{-1}{2} \\ = 2$$

41) $(\sin 120^\circ \cos 150^\circ) - (\cos 120^\circ \sin 150^\circ)$

$$= \frac{\sqrt{3}}{2} \cdot \frac{-\sqrt{3}}{2} + \frac{+1}{2} \cdot \frac{1}{2} \\ = \frac{-3}{4} + \frac{1}{4} \\ = \frac{-1}{2}$$