

Find the point (x,y) on the unit circle that corresponds to the real number t .

1. $t = \frac{\pi}{4}$

2. $t = \frac{\pi}{3}$

3. $t = \frac{7\pi}{6}$

4. $t = \frac{5\pi}{4}$

5. $t = \frac{2\pi}{3}$

6. $t = \frac{3\pi}{2}$

7. $t = \pi$

8. $t = -\frac{4\pi}{3}$

Evaluate (if possible) the sine, cosine, and tangent of the real number.

9. $t = \frac{\pi}{4}$

10. $t = \frac{\pi}{3}$

11. $t = -\frac{\pi}{6}$

12. $t = \frac{11\pi}{6}$

13. $t = \frac{3\pi}{4}$

14. $t = \frac{5\pi}{3}$

15. $t = \frac{\pi}{2}$

16. $t = 2\pi$

Evaluate (if possible) the six trigonometric functions of the real number.

17. $t = \frac{\pi}{6}$

18. $t = \frac{7\pi}{4}$

19. $t = -\frac{5\pi}{3}$

20. $t = \frac{3\pi}{2}$

Answers:

1) $\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$	2) $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$	3) $\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$	4) $\left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$	5) $\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$
6) $(0, -1)$	7) $(-1, 0)$	8) $\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$		
9) $\sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$ $\cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$ $\tan \frac{\pi}{4} = 1$	10) $\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$ $\cos \frac{\pi}{3} = \frac{1}{2}$ $\tan \frac{\pi}{3} = \sqrt{3}$	11) $\sin \frac{7\pi}{6} = -\frac{1}{2}$ $\cos \frac{7\pi}{6} = -\frac{\sqrt{3}}{2}$ $\tan \frac{7\pi}{6} = \frac{\sqrt{3}}{3}$	12) $\sin \frac{11\pi}{6} = -\frac{1}{2}$ $\cos \frac{11\pi}{6} = \frac{\sqrt{3}}{2}$ $\tan \frac{11\pi}{6} = -\frac{\sqrt{3}}{3}$	13) $\sin \frac{3\pi}{4} = \frac{\sqrt{2}}{2}$ $\cos \frac{3\pi}{4} = -\frac{\sqrt{2}}{2}$ $\tan \frac{3\pi}{4} = -1$
14) $\sin \frac{5\pi}{3} = -\frac{\sqrt{3}}{2}$ $\cos \frac{5\pi}{3} = \frac{1}{2}$ $\tan \frac{5\pi}{3} = -\sqrt{3}$	15) $\sin \frac{\pi}{2} = 1$ $\cos \frac{\pi}{2} = 0$ $\tan \frac{\pi}{2}$ undefined	16) $\sin 2\pi = 0$ $\cos 2\pi = 1$ $\tan 2\pi = 0$		
17) $\sin \frac{\pi}{6} = \frac{1}{2}$ $\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$ $\tan \frac{\pi}{6} = \frac{\sqrt{3}}{3}$ $\csc \frac{\pi}{6} = 2$ $\sec \frac{\pi}{6} = \frac{2\sqrt{3}}{3}$ $\cot \frac{\pi}{6} = \sqrt{3}$	18) $\sin \frac{7\pi}{4} = -\frac{\sqrt{2}}{2}$ $\cos \frac{7\pi}{4} = \frac{\sqrt{2}}{2}$ $\tan \frac{7\pi}{4} = -1$ $\csc \frac{7\pi}{4} = -\sqrt{2}$ $\sec \frac{7\pi}{4} = \sqrt{2}$ $\cot \frac{7\pi}{4} = -1$	19) $\sin\left(-\frac{5\pi}{3}\right) = \frac{\sqrt{3}}{2}$ $\cos\left(-\frac{5\pi}{3}\right) = \frac{1}{2}$ $\tan\left(-\frac{5\pi}{3}\right) = \sqrt{3}$ $\csc\left(-\frac{5\pi}{3}\right) = \frac{2\sqrt{3}}{3}$ $\sec\left(-\frac{5\pi}{3}\right) = 2$ $\cot\left(-\frac{5\pi}{3}\right) = \frac{\sqrt{3}}{3}$	20) $\sin \frac{3\pi}{2} = -1$ $\cos \frac{3\pi}{2} = 0$ $\tan \frac{3\pi}{2}$ undefined $\csc \frac{3\pi}{2} = -1$ $\sec \frac{3\pi}{2}$ undefined $\cot \frac{3\pi}{2} = 0$	