Name:_____

# Exact Values Day 1

SOHCAHTOA

Find the exact value of the trigonometric function at the given real number

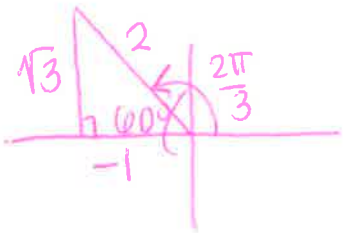
$\frac{\pi}{3} = 60$

1. $\sin\frac{2\pi}{3}$

2. $\cos\frac{2\pi}{3}$

3. $\tan\frac{2\pi}{3}$

4. $\sec\frac{2\pi}{3}$




$\sin 60° = \frac{\sqrt{3}}{2}$

$\cos 60° = \frac{-1}{2}$

$\tan\theta = \frac{\sqrt{3}}{-1}$

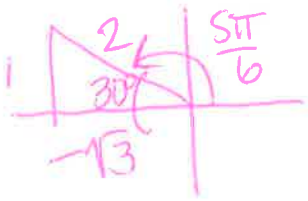
$\sec\theta = -2$

5. $\sin\frac{5\pi}{6}$

6. $\cos\frac{5\pi}{6}$

7. $\tan\frac{5\pi}{6}$

8. $\csc\frac{5\pi}{6}$




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

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

$\tan\theta = \frac{1}{-\sqrt{3}}$

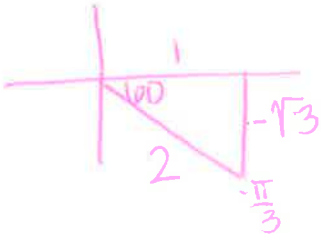
$\csc\theta = 2$

9. $\sin\frac{-\pi}{3}$

10. $\cos\frac{-\pi}{3}$

11. $\tan\frac{-\pi}{3}$

12. $\cot\frac{-\pi}{3}$




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

$\cos\frac{-\pi}{3} = \frac{1}{2}$

$\tan\frac{-\pi}{3} = \frac{-\sqrt{3}}{1}$

$\cot\frac{-\pi}{3} = \frac{-1}{\sqrt{3}}$

13. $\sin\frac{5\pi}{4}$

14. $\cos\frac{5\pi}{4}$

15. $\tan\frac{5\pi}{4}$

16. $\csc\frac{5\pi}{4}$


$\sin\frac{5\pi}{4} = \frac{-1}{\sqrt{2}}$

$\cos\frac{5\pi}{4} = \frac{-1}{\sqrt{2}}$

$\tan\frac{5\pi}{4} = 1$

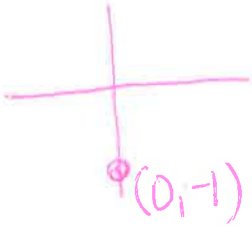
$\csc\frac{5\pi}{4} = -\sqrt{2}$

17. $\sin\frac{3\pi}{2}$

18. $\cos\frac{3\pi}{2}$

19. $\tan\frac{3\pi}{2}$

20. $\sec\frac{3\pi}{2}$




$\sin\frac{3\pi}{2} = -1$

$\cos\frac{3\pi}{2} = 0$

$\tan\frac{3\pi}{2} =$ undefined

$\sec\frac{3\pi}{2} =$ undefined

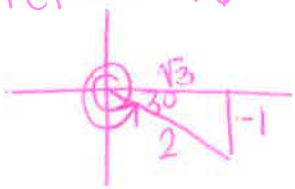
21. $\sin\frac{23\pi}{6}$

22. $\cos\frac{23\pi}{6}$

23. $\tan\frac{23\pi}{6}$

24. $\cot\frac{23\pi}{6}$

ref $\angle = \pi/6$




$\sin\frac{23\pi}{6} = \frac{-1}{2}$

$\cos\frac{23\pi}{6} = \frac{\sqrt{3}}{2}$

$\tan\frac{23\pi}{6} = \frac{-1}{\sqrt{3}}$

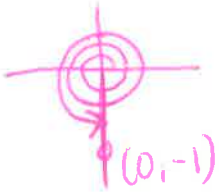
$\cot\frac{23\pi}{6} = -\sqrt{3}$

25. $\sec\frac{11\pi}{2}$

26. $\csc\frac{11\pi}{2}$

27. $\cot\frac{11\pi}{2}$

28. $\tan\frac{11\pi}{2}$




$\sec\frac{11\pi}{2} =$ undefined

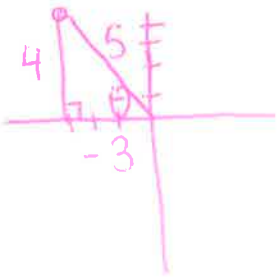
$\csc\frac{11\pi}{2} = -1$

$\cot\frac{11\pi}{2} = 0$

$\tan\frac{11\pi}{2} =$ undefined

Find the exact values of the six trig functions of an angle $\theta$ whose terminal side passes through the given point.

29. $(-3,4)$




$\sin\theta = \frac{4}{5}$ $\csc\theta = \frac{5}{4}$

$\cos\theta = \frac{-3}{5}$ $\sec\theta = \frac{-5}{3}$

$\tan\theta = \frac{-4}{3}$ $\cot\theta = \frac{-3}{4}$

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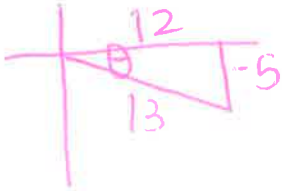
30. $(12,-5)$




$12^2 + 5^2 = x^2$

$\sin\theta = \frac{-5}{13}$

$\cos\theta = \frac{12}{13}$

$\tan\theta = \frac{-5}{12}$

$\csc\theta = \frac{13}{-5}$

$\sec\theta = \frac{13}{12}$

$\cot\theta = \frac{-12}{5}$

31. If $\csc\theta > 0$, then $\theta$ lies in quadrant(s) I or II

(positive)

32. If $\sin\theta < 0$, and $\cos\theta > 0$ then $\theta$ lies in quadrant(s) IV

neg. pos.