PROBLEMS AND SOLUTIONS - THE SIX TRIGONOMETRIC RATIOS

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PLEASE NOTE THAT YOU CANNOT ALWAYS USE A CALCULATOR ON THE ACCUPLACER - COLLEGE-LEVEL MATHEMATICS TEST! YOU MUST BE ABLE TO DO SOME PROBLEMS WITHOUT A CALCULATOR!

Problem 1:

The point ***(-3, 4)*** lies on the terminal side of an angle θ, which is in standard position. Determine the EXACT numeric values of the six trigonometric ratios of the angle θ.

Problem 2:

Indicate in which two quadrants the terminal side of the following angles θ must lie. Assume that θ is not a *Quadrantal Angle*.

a. $\cos\theta = -\frac{\sqrt{5}}{6}$	b. $\tan\theta = \frac{1}{4}$	c. $\cot\theta = -\sqrt{7}$	d. $\sin\theta = -\frac{2}{3}$
e. $\cos\theta = \frac{2}{5}$	f. $\tan\theta = -3$	g. $\cot\theta = \frac{\sqrt{11}}{9}$	h. $\sin\theta = \frac{\sqrt{2}}{2}$

Problem 3:

True or False? If $\cos 45^\circ = \frac{\sqrt{2}}{2}$, then $\cos 135^\circ = -\frac{\sqrt{2}}{2}$.

Problem 4:

Use a calculator to find the numeric value of $\sin 34^o$ rounded to four decimal places.

Problem 5:

Use a calculator to find the numeric value of $\cos 55^o$ rounded to four decimal places.

Problem 6:

Use a calculator to find the numeric value of $\cos\left(\frac{\pi}{8}\right)$ rounded to three decimal places.

Problem 7:

Use a calculator to find the numeric value of $\sec 13^{o}$ rounded to three decimal places.

Problem 8:

Use a calculator to find the numeric value of $\csc 39^{o}$ rounded to three decimal places.

Problem 9:

Find the numeric value of $\tan 90^{o}$.

Problem 10:

Find the numeric value of $\cot 90^{o}$.

Problem 11:

Use a calculator to find the numeric value of $\cot 1$ rounded to four decimal places.

Problem 12:

Find the EXACT numeric value of $\sin 315^{o}$.

Problem 13:

Find the EXACT numeric value of $\csc 225^{o}$.

Problem 14:

Find the EXACT numeric value of $\sec 330^{o}$.

Problem 15:

Find the numeric value of $\csc\left(-\frac{11\pi}{13}\right)$. Round to 3 decimal places.

Problem 16:

Find the EXACT numeric value of $\cos 150^{o}$.

Problem 17:

Find the EXACT numeric value of $\tan 210^{o}$.

Problem 18:

Find the EXACT numeric value of $\sin(-135^{o})$.

Problem 19:

Find the EXACT numeric value of $\tan 300^{o}$.

Problem 20:

Find the EXACT numeric value of $\sin (11\pi/6)$.

Problem 21:

Find the EXACT numeric value of $\tan 225^{o}$.

Problem 22:

Find the EXACT numeric value of $\sin 660^{o}$.

Problem 23:

Find the EXACT numeric value of $\cos (-15\pi/4)$.

Problem 24:

Find the EXACT numeric value of $\cot 90^{o}$.

Problem 25:

Find the EXACT numeric value of $\sin 630^{o}$.

Problem 26:

Find the EXACT numeric value of $\sin(-90^{o})$.

Problem 27:

Find the EXACT numeric value of $\cos(-540^{o})$.

SOLUTIONS

You can find detailed solutions below the link for this problem set!

1. $\sin\theta = \frac{4}{5}$ $\csc\theta = \frac{5}{4}$ $\cos\theta = -\frac{3}{5}$ $\sec\theta = -\frac{5}{3}$ $\tan\theta = -\frac{4}{3}$ $\cot\theta = -\frac{3}{4}$	2. a. QII and III b. QI and III c. QII and IV d. QIII and IV e. QI and IV f. QII and IV g. QI and QIII h. QI and II	3. True
4. ***0.5592***	5. ***0.5736***	6. ***0.924***
7. **1.026**	8. ***1.589***	9. ***undefined***
10. ***0***	11. ***0.6421***	12. $-\frac{\sqrt{2}}{2}$
13. $-\sqrt{2}$	14. $\frac{2\sqrt{3}}{3}$	15. ***-2.152***
16. $-\frac{\sqrt{3}}{2}$	17. $\frac{\sqrt{3}}{3}$	18. $-\frac{\sqrt{2}}{2}$
19. $-\sqrt{3}$	20. $-\frac{1}{2}$	21. ***1***
22. $-\frac{\sqrt{3}}{2}$	23. $\frac{\sqrt{2}}{2}$	24. ***0***
25. ***-1***	26. ***-1***	27. ***-1***