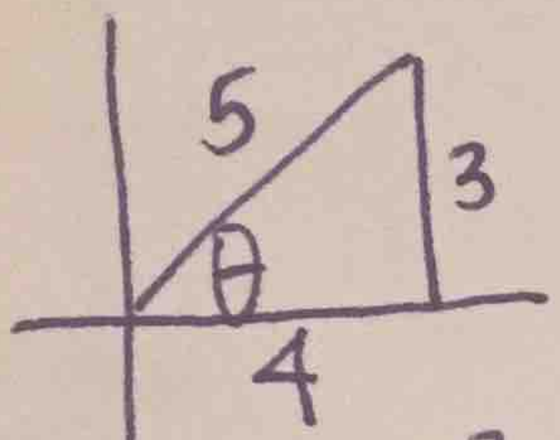
3.6 Composition of Trig Values **Name:**_____

Find the exact values of each expression using radicals or radians if necessary.

1. $\tan\left(\cos^{-1}\left(\frac{4}{5}\right)\right)$



$4^2+y^2=5^2$

$\tan\theta = \frac{O}{A} = \boxed{\frac{3}{4}}$

2. $\cos\left(\arctan\left(\frac{4}{3}\right)\right)$

$\frac{3}{5}$

3. $\sin\left(\tan^{-1}\left(-\frac{5}{12}\right)\right)$

QIV

$\frac{-5}{13}$

4. $\sec\left(\arcsin\left(-\frac{4}{7}\right)\right)$

$\frac{7}{\sqrt{33}}$

5. $\sin^{-1}(\cos(0))$

$\cos 0 = 1$

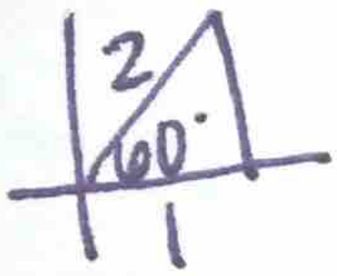
$\sin^{-1}(1) = \boxed{\frac{\pi}{2}}$

	S	C	T
0	0	1	0
$\pi/2$	1	0	U
π	0	-1	0
$3\pi/2$	-1	0	U

6. $\arccos\left(\sin\left(\frac{\pi}{6}\right)\right)$

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

$\arccos\left(\frac{1}{2}\right) = \boxed{\frac{\pi}{3}}$



7. $\cos^{-1}\left(\sin\left(\frac{4\pi}{3}\right)\right)$

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

8. $\cot\left(\csc^{-1}\left(-\frac{5}{3}\right)\right)$

$-\frac{4}{3}$

9. $\sin^{-1}\left(\cos\left(\frac{7\pi}{6}\right)\right)$

$\frac{-\pi}{3}$

10. $\tan^{-1}(\cos(\pi))$

$-\frac{\pi}{4}$

11. $\tan^{-1}\left(\tan\left(-\frac{4\pi}{3}\right)\right)$

$-\frac{\pi}{3}$

12. $\cos\left(\arcsin\left(-\frac{\sqrt{3}}{5}\right)\right)$

$\frac{\sqrt{22}}{5}$

13. $\sin\left(\sec^{-1}\left(-\frac{4}{3}\right)\right)$

$\frac{\sqrt{7}}{4}$

14. $\operatorname{arcsec}\left(\sec\left(-\frac{\pi}{3}\right)\right)$

$\frac{\pi}{3}$

15. $\sin^{-1}\left(\cot\left(\frac{3\pi}{4}\right)\right)$

$-\frac{\pi}{2}$

16. $\tan\left(\operatorname{arcsec}\left(-\sqrt{2}\right)\right)$

-1

17. $\sin\left(\sec^{-1}(-4)\right)$

$\frac{\sqrt{15}}{4}$

18. $\sec\left(\csc^{-1}(-3)\right)$

$\frac{3}{\sqrt{8}}$

19. $\csc\left(\cot^{-1}(2)\right)$

$\sqrt{5}$

20. $\arcsin\left(\cos(\pi)\right)$

$-\frac{\pi}{2}$

21. $\tan\left(\sin^{-1}\left(-\frac{7}{5}\right)\right)$

undefined.