’02 Honors Trigonometry

EXAM CHAPTER 3

No Homework *again!*
... and to think we get honors credit ...

11/1

Read ONLY: Pgs 109-114 and pgs 122 - 125 • • • • • • • • • • • • • • • • • • Do section I on back of HW sked # 1 11/4	# 2 Section II on back of sked #2 11/5	# 3 Prove: $\cos\left(\sin^{-1} u\right) = \sqrt{1-u^2}$ # 4 Pg 126 1 – 7, 19 – 24 11/6	# 5 Pg 121 7 – 21 Section V on back of sked 11/ 7	# 6 Section III back of sked # 7 R/C pg 137 11/8
School Holiday *Start work on # 8 Section IV on back of sked.* 11/11	Finish/ReDo Section IV on back of sked Quest for Quiz Points??? **(there are 5 other...)** 11/12	***“FREEDOM RINGS”*** ***It almost makes you want to march!*** Value: **10 assignments!!!** 11/13	***Have at least 1 - 20 done by the end of the day.*** 11/ 14	Continue having fun in Freedomland. Une autre la quizzette?? 11/ 15
When was the last time you looked at the “exam” door? ***You should have completed 1 - 60 by the beginning of the period tomorrow!*** 11/18	11/19		***Review*** ***Be prepared to put up last year’s exam. Come to class prepared!*** 11/21	**Exam Ch 4** 11/22

Note: $\rightarrow \tan^{-1} x \neq \dfrac{\sin^{-1} x}{\cos^{-1} x}$

I Find the value of each of the following:

a) $\cos^{-1}\frac{\sqrt{3}}{2}$ b) $\sin^{-1}\frac{1}{\sqrt{2}}$ c) $\sin^{-1}\frac{1}{2}$ d) $\cos^{-1}\left(-\frac{1}{2}\right)$ e) $\cos\left(\cos^{-1}\frac{1}{3}\right)$ f) $\sin\left(\sin^{-1}\frac{1}{5}\right)$

g) $\cos\left(\sin^{-1}\left(-\frac{4}{5}\right)\right)$ h) $\sin\left(\cos^{-1}\left(-\frac{5}{13}\right)\right)$ i) $\arcsin(\sin 3)$ j) $\arccos(\cos 5)$

II Determine **ALL** values of u such that: a) $\left(\sqrt{u^2}\right) = u$ b) $\left(\sqrt{u}\right)^2 = u$

c) $\cos\left(\cos^{-1} u\right) = u$ d) $\cos^{-1}(\cos u) = u$ e) $\sin\left(\sin^{-1} u\right) = u$ f) $\sin^{-1}(\sin u) = u$

III a) Pg 121 problem 22 b) When is this true? $\csc x = \dfrac{1}{\sin x}$ c) Determine $\sin^{-1} x = \csc^{-1}$?

d) complete: $\cos\left(\tan^{-1} u\right) = \cdots$ e) Simplify: $\sin\left(\sin^{-1}\frac{5}{13} + \tan^{-1}\frac{1}{2}\right)$ $\dfrac{22\sqrt{5}}{65}$

f) Simplify: $\cos\left(\tan^{-1}\frac{12}{13} + \sin^{-1}\frac{1}{2}\right)$ $\dfrac{13\sqrt{939} - 12\sqrt{313}}{626}$

IV a) Do page 126 problems 25, 26, and 27

b) verify : (you may work with *both* sides.) : (1) $\cot^{-1} x = \tan^{-1}\frac{1}{x}$; $x > 0$ (2) $\tan^{-1} x = \frac{\pi}{2} - \cot^{-1} x$; $x > 0$

c) True or false? : $\cot^{-1} x = \tan^{-1}\frac{1}{x} + \pi$; $x < 0$ (Hint: graph $a(x) = \cot^{-1} x$ and $b(x) = \tan^{-1} x$ on the same axis.) Explain.

V Determine **ALL** values of u such that:

a) $\tan\left(\tan^{-1} u\right) = u$ b) $\tan^{-1}(\tan u) = u$ c) $\csc^{-1}(\csc u) = u$ d) $\csc\left(\csc^{-1} u\right) = u$

e) $\sec\left(\sec^{-1} u\right) = u$ f) $\sec^{-1}(\sec u) = u$ g) $\cot\left(\cot^{-1} u\right) = u$ h) $\cot^{-1}(\cot u) = u$