

Wednesday 12/5	5.4 Sum & Difference Formulas	Worksheet p. 9 & 10 (begin)
Thursday 12/6	5.4 Sum & Difference Formulas (cont'd)	Worksheet p. 9 & 10 (finish) Study for Quiz
Friday 12/7	Quiz 5.3 (solve equations)	
Monday 12/10	5.5 Double Angle Formulas	Worksheet p. 11 Study for quiz
Tuesday 12/11	Quiz 5.4 (sum/difference)	Study for test
Wednesday 12/12	Review	Study for test
Thursday 12/13	Test Unit 7 – Analytic Trig	Work on fall final review
Friday 12/14	Fall Final Review	Work on fall final review
Monday 12/17	Fall Final Review	Study for your exams
Tuesday 12/18	Semester Exam (6 th)	Study for your exams
Wednesday 12/19	Semester Exams (2 nd , 4 th)	Study for your exams
Thursday 12/20	Semester Exams (3 rd , 5 th)	Study for your exams
Friday 12/21	Semester Exams (1 st , 7 th)	Have a great Break ☺

RETEACH – Unit 5 –

Evaluate without a calculator. Give angle measure in radians.

1) $\sin^{-1}\left(\frac{-\sqrt{3}}{2}\right) = \frac{-\pi}{3}$ 2) $\tan^{-1}\left(\frac{-1}{\sqrt{3}}\right) = \frac{-\pi}{6}$ 3) $\arccos\left(\frac{-\sqrt{3}}{2}\right) = \frac{5\pi}{6}$ 4) $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) = \frac{\pi}{6}$
5) $\arctan(1) = \frac{\pi}{4}$ 6) $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) = \frac{\pi}{3}$ 7) $\tan^{-1}(0) = 0$ 8) $\sin^{-1}(1) = \frac{\pi}{2}$

Evaluate without a calculator. Put answers in simplified radical form.

9) $\cos\left(\sin^{-1}\frac{1}{2}\right) = \frac{\sqrt{3}}{2}$ 10) $\sec\left(\arcsin\frac{\sqrt{3}}{2}\right) = 2$ 11) $\tan\left(\sin^{-1}\frac{-\sqrt{2}}{2}\right) = -1$

Evaluate each expression by drawing a reference triangle in Quadrant I. Leave answer in radical form if necessary.

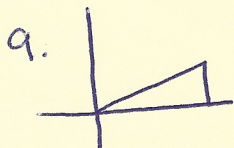
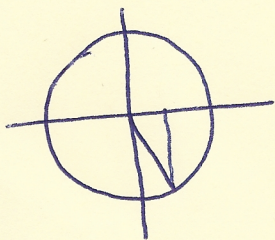
12) $\tan\left(\sin^{-1}\frac{15}{17}\right) = \frac{15}{8}$ 13) $\sec\left(\arccos\frac{2}{3}\right) = \frac{3}{2}$
14) $\sin\left(\arccos\frac{12}{13}\right) = \frac{5}{13}$ 15) $\sin\left(\cot^{-1}\frac{3}{4}\right) = \frac{3}{5}$

Find the values of θ , where $0 \leq \theta < 360^\circ$ to the nearest hundredth of a degree.

16) $\cos\theta = 0.8266$ Ref $\angle = 34.249^\circ$ 17) $\cot\theta = -0.7212$ Ref $\angle = 54.201^\circ$ 18) $\csc\theta = 1.528$ Ref $\angle = 40.878^\circ$
 $\theta = 34.25^\circ$ or 325.751° $\theta = 125.799^\circ$ or 305.799° $\theta = 40.878^\circ$ or 139.122°

Find the values of θ , where $0 \leq \theta < 2\pi$, to the nearest hundredth of a radian.

19) $\tan\theta = -2.8091$ Ref $\angle = 1.229$ 20) $\sec\theta = -4.7439$ Ref $\angle = 1.348$ 21) $\sin\theta = 0.2345$ Ref $\angle = 0.237$
 $\theta = 1.913$ or 5.054 $\theta = 1.783$ or 4.500 $\theta = 0.237$ or 2.905



Fundamental Identities:

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

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

$$\cos \theta = \frac{1}{\sec \theta}$$

$$\sec \theta = \frac{1}{\cos \theta}$$

← MEMORIZE THESE

$$\tan \theta = \frac{1}{\cot \theta} = \frac{\sin \theta}{\cos \theta}$$

$$\cot \theta = \frac{1}{\tan \theta} = \frac{\cos \theta}{\sin \theta}$$

Even/Odd Identities: Even functions:

$$\cos(-\theta) = \cos \theta$$

$$\sec(-\theta) = \sec \theta$$

Odd functions:

$$\sin(-\theta) = -\sin \theta$$

$$\csc(-\theta) = -\csc \theta$$

$$\tan(-\theta) = -\tan \theta$$

$$\cot(-\theta) = -\cot \theta$$

Pythagorean Identities:

(re-arrange these to form more identities)

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$1 + \tan^2 \theta = \sec^2 \theta$$

$$1 + \cot^2 \theta = \csc^2 \theta$$

EXAMPLES

Simplify the following.

1. $\tan x \cos x$

$$\frac{\sin x \cdot \cos x}{\cos x} =$$

$$\sin x$$

2. $\sec x \cot x$

$$\frac{1}{\cos x} \cdot \frac{\cos x}{\sin x} =$$

$$\frac{1}{\sin x} = \csc x$$

3. $(1 - \cos x)(1 + \cos x)$

$$1 - \cos^2 x =$$

$$\sin^2 x$$

4. $(\sec x - 1)(\sec x + 1)$

$$\sec^2 x - 1 =$$

$$\tan^2 x$$

5. $\sin^2 x - 1$

$$-\cos^2 x$$

6. $\sec x(\sec x - \cos x)$

$$\sec^2 x - \cancel{\cos} 1 =$$

$$\tan^2 x$$

7. $\cot^2 x - \csc^2 x$

$$-1$$

8. $(\csc A - 1)(\csc A + 1)$

$$\csc^2 A - 1 =$$

$$\cot^2 A$$

9. $\sin \theta + \cot \theta \cos \theta$

$$\sin \theta + \frac{\cos^2 \theta}{\sin \theta} =$$

$$\sin^2 \theta + \cos^2 \theta = 1$$

10. $\frac{\csc^2 x - 1}{\cot x}$

$$\frac{\cot^2 x}{\cot x} =$$

$$\cot x$$

11. $\frac{\cos x \sin x}{1 - \sin^2 x}$

$$\frac{\cos x \sin x}{\cos^2 x} =$$

$$\tan x$$

12. $\frac{\sin x}{\csc x} + \frac{\cos x}{\sec x}$

$$\sin^2 x + \cos^2 x = 1$$