SCHOOL OF THE WEST

Trigonometry

Final Exam (entire course)

Convert from degrees to radians.

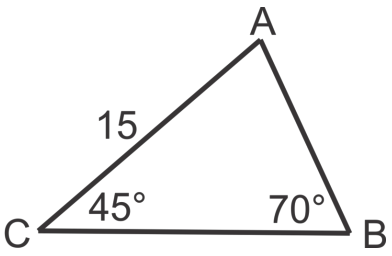
180° = π rad 60° = $\frac{\pi}{3}$ rad 72° = $\frac{2\pi}{5}$ rad 144° = $\frac{4\pi}{5}$ rad

Convert from radians to degrees.

$\frac{\pi}{2}$ = **90°** $\frac{3\pi}{2}$ = **270°** $\frac{11\pi}{12}$ = **165°** $\frac{5\pi}{12}$ = **75°**

Find the values of the following trig functions. <u>All angles are in radians</u>.

sin $\frac{\pi}{6}$ = $\frac{1}{2}$ tan2π = **0** cot $\frac{\pi}{4}$ = **1** cos $\frac{\pi}{3}$ = $\frac{1}{2}$



Find all angles and side lengths of this triangle. (not to scale)

Angle A = **180° - 70° - 45° = 65°**

Use the Law of Sines to find:

AB = **11.29**

CB = **14.47**

Given that sin 37°= 0.6018 , find:

cos 37° = $\sqrt{1 - \sin^2 37^\circ}$ = **0.7986** tan 37°= $\frac{\sin 37^\circ}{\cos 37^\circ}$ = **0.7535**

Evaluate (i.e. solve) the following inverse trig functions. (You may express your answer in deg or rad.)

$\tan^{-1}\sqrt{3}$ = **60°** $\csc^{-1} 2$ = **30°** $\sin \sec^{-1}\sqrt{2}$ = **45°**

Evaluate the following logarithms.

$log_5(525)$ = **4** $log_8(64 \cdot 8)$ = **3** $log_2(64 \cdot 8)$ = **9**

Evaluate the following series.

$\sum_{n=1}^{\infty} 5^{-2n} = \frac{1}{24}$ $\sum_{n=5}^{\infty} 3^{-n} = \frac{1}{2 \cdot 3^4} = \frac{1}{162}$ $\sum_{n=1}^{10} 2^{-n} = \frac{1023}{1024}$