Today's Plan:

Learning Target (standard): I will review for the semester exam.

Students will: Complete practice problems over previous concepts at the boards and study for my exam.

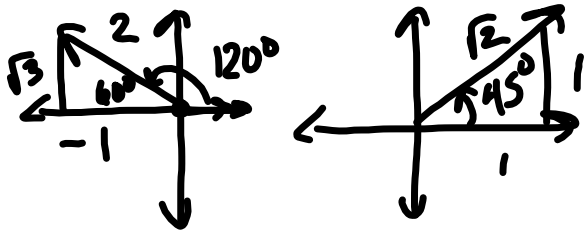
Teacher will: Provide practice problems over previous concepts, check homework problems for accuarcy and provide students feedback, describe and provide examples of exam problems.

Assessment: Board work

Differentiation: Students will work at the board, actively engage in practice review concepts with the aid of other students and the teacher.

38) $\tan 75^\circ$

$= \tan(120^\circ - 45^\circ)$



$$= \frac{\tan 120^\circ - \tan 45^\circ}{1 + \tan 120^\circ \tan 45^\circ}$$

$$= \frac{-\sqrt{3} - 1}{1 + (-\sqrt{3})(1)}$$

$$= -\frac{\sqrt{3}-1}{1-\sqrt{3}} \cdot \frac{1+\sqrt{3}}{1+\sqrt{3}}$$

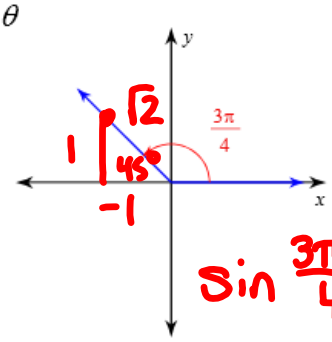
$$= -\frac{\sqrt{3} - 3 - 1 - \sqrt{3}}{1-3}$$

$$= -\frac{2\sqrt{3}-4}{-2}$$

$$= \sqrt{3} + 2$$

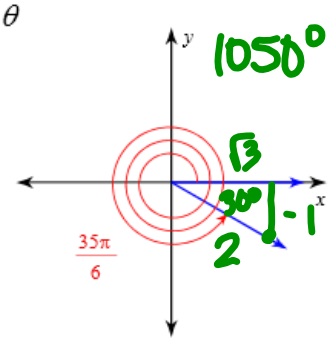
Find the exact value of each trigonometric function.

41) $\sin\theta$



$\sin\frac{3\pi}{4} = \frac{\sqrt{2}}{2}$

42) $\csc\theta$



$\csc\frac{35\pi}{6} = -2$

Find each angle measure to the nearest degree.

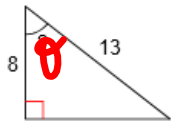
43) $\sin Y = 0.2588$

$\sin^{-1}(.2588) = Y$

$Y = 15^\circ$

Find the measure of the indicated angle to the nearest degree.

44)

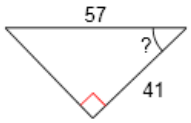


$\cos\theta = \frac{8}{13}$

$\cos^{-1}\left(\frac{8}{13}\right) = \theta$

$\theta = 52^\circ$

45)

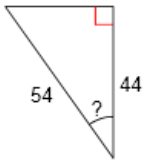


$\cos\theta = \frac{41}{57}$

$\cos^{-1}\left(\frac{41}{57}\right) = \theta$

$\theta = 44^\circ$

46)

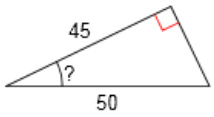


$\cos\theta = \frac{44}{54}$

$\cos^{-1}\left(\frac{44}{54}\right) = \theta$

$\theta = 35^\circ$

47)



$\cos\theta = \frac{45}{50}$

$\cos^{-1}\left(\frac{45}{50}\right) = \theta$

$\theta = 26^\circ$

Establish the identity.

$$\sin\theta\csc\theta - \sin^2\theta = \cos^2\theta$$

$\sin\theta\left(\frac{1}{\sin\theta}\right) - \sin^2\theta$

$1 - \sin^2\theta$

$(\sin^2\theta + \cos^2\theta) - \sin^2\theta$

$\cos^2\theta$ $\therefore$ Q.E.D.

Establish the identity.

$$\frac{\sin\theta}{1+\cos\theta}+\frac{1+\cos\theta}{\sin\theta}=2\csc\theta$$

$$\frac{\sin^2\theta}{\sin\theta(1+\cos\theta)}+\frac{(1+\cos\theta)^2}{\sin\theta(1+\cos\theta)}$$

$$\frac{\sin^2\theta+\cos^2\theta+2\cos\theta+1}{\sin\theta(1+\cos\theta)}$$

$$\frac{(1)+2\cos\theta+1}{\sin\theta(1+\cos\theta)}$$

$$\frac{2+2\cos\theta}{\sin\theta(1+\cos\theta)}$$

$$\frac{2(1+\cos\theta)}{\sin\theta(1+\cos\theta)}$$

$$2\cdot\frac{1}{\sin\theta}$$

$$2(\csc\theta)$$

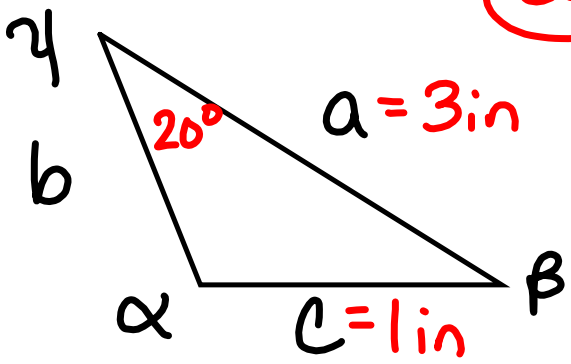
$$2\csc\theta \quad \therefore \text{Q.E.D.}$$

Solve the triangle:

$a = 3in$

$c = 1in$

$\gamma = 20°$



SSA

$\frac{\sin\alpha}{a} = \frac{\sin\gamma}{c}$

$\frac{\sin\alpha}{3} = \frac{\sin 20°}{1}$

$\sin\alpha = 3\sin 20°$

$\sin\alpha = 1.0261 > 1$

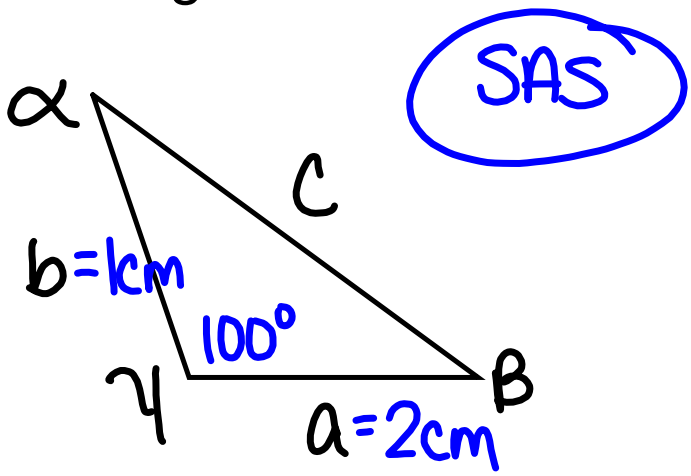
no triangle

Find the area of the triangle:

$a = 2cm$

$b = 1cm$

$\gamma = 100°$



$A = \frac{1}{2}ab\sin\gamma$

$= \frac{1}{2}(2)(1)\sin 100°$

$= \sin 100°$

$A = .985 cm^2$