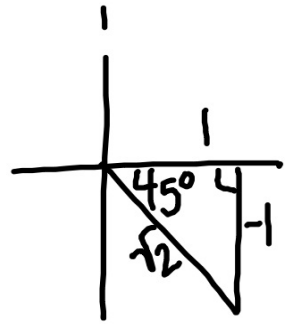
7. $= \tan 2(157.5^\circ)$

$= \tan 315^\circ$

$= -1$



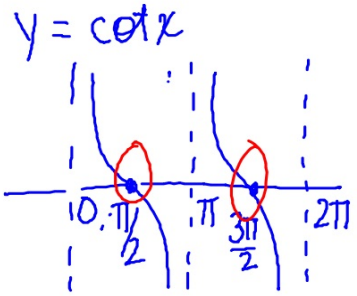
29. $\cot x = \tan 2x$

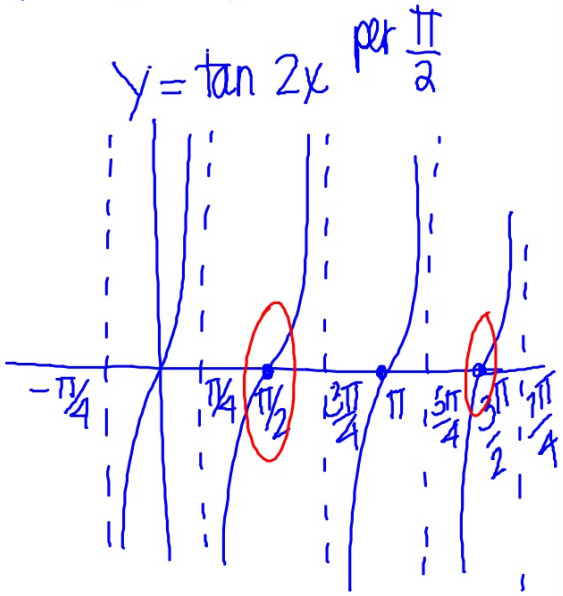
$$\frac{1}{\tan x} = \frac{2\tan x}{1-\tan^2 x}$$

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

$$3\tan^2 x = 1$$

$$\tan x = \pm\frac{1}{\sqrt{3}}$$





$(1-\sin^2 x) - 2(1-2\sin^2 x) + 1$

31. $\cos^2 x - 2\cos 2x + 1 \equiv 3\sin^2 x$

$\cos^2 x - 2(2\cos^2 x - 1) + 1$ | $3(1-\cos^2 x)$

$\cos^2 x - 4\cos^2 x + 3$ | $3 - 3\cos^2 x$

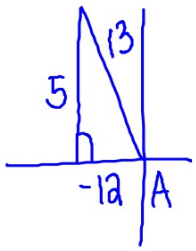
$3 - 3\cos^2 x$

12. $\sin\left(\frac{45^\circ}{2}\right) = +\sqrt{\frac{1-\cos 45^\circ}{2}}$

$= \sqrt{\frac{1-\sqrt{2}/2}{2}}$

27

$\sec 2A = \frac{1}{\cos 2A}$



$= \frac{1}{1-2\sin^2 A} = \frac{1}{1-2\left(\frac{25}{169}\right)}$

Q2-

13. $\cos\left(\frac{330^\circ}{2}\right) = -\sqrt{\frac{1+\cos 330^\circ}{2}} = \frac{1}{\frac{119}{169}} = \frac{169}{119}$

$= -\sqrt{\frac{1+\sqrt{3}/2}{2}}$