نام و نام خانوادگی روشنا خزائی.............. پاسخنامه تشریحی تکلیف شماره ...۲... کلاس ...دهم تجربی............

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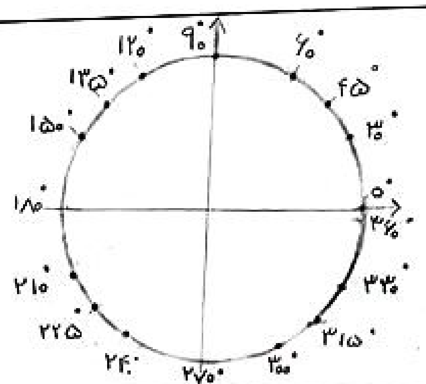

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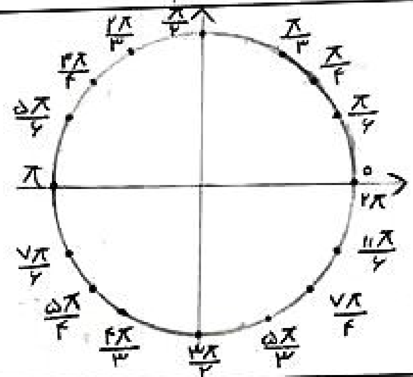

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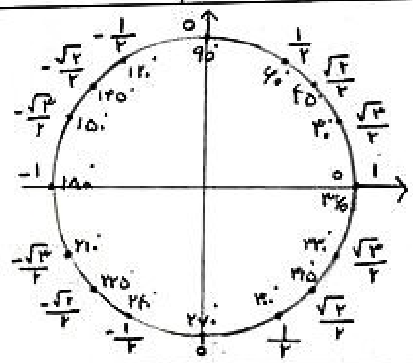

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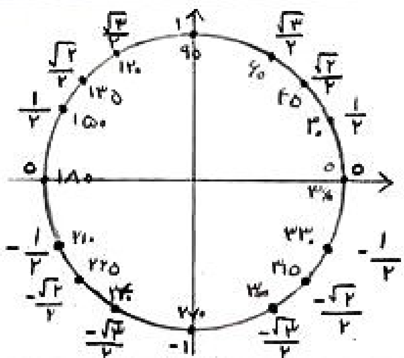

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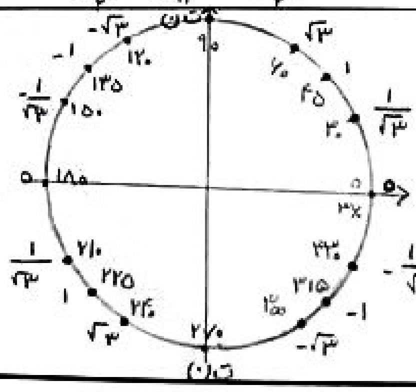

$\tan = \frac{\sin}{\cos}$

$\tan 0 = \frac{0}{1} = 0$

$\tan 30 = \frac{1}{2} \div \frac{\sqrt{3}}{2} = \frac{1}{\sqrt{3}}$

$\tan 45 = \frac{\sqrt{2}}{2} \div \frac{\sqrt{2}}{2} = 1$

$\tan 60 = \frac{\sqrt{3}}{2} \div \frac{1}{2} = \sqrt{3}$

$\tan 90 = \frac{1}{0} =$ ت ن

$\tan 120 = \frac{+\sqrt{3}}{2} \div -\frac{1}{2} = -\sqrt{3}$

$\tan 135 = \frac{\sqrt{2}}{2} \div -\frac{\sqrt{2}}{2} = -1$

$\tan 150 = \frac{1}{2} \div -\frac{\sqrt{3}}{2} = -\frac{1}{\sqrt{3}}$

$\tan 180 = \frac{0}{-1} = 0$

$\tan 210 = -\frac{1}{2} \div -\frac{\sqrt{3}}{2} = \frac{1}{\sqrt{3}}$

$\tan 225 = -\frac{\sqrt{2}}{2} \div -\frac{\sqrt{2}}{2} = +1$

$\tan 240 = \frac{-\sqrt{3}}{2} \div -\frac{1}{2} = \sqrt{3}$

$\tan 270 = \frac{-1}{0} =$ ت ن ، تعریف نشده

$\tan 300 = -\frac{\sqrt{3}}{2} \div \frac{1}{2} = -\sqrt{3}$

$\tan 315 = -\frac{\sqrt{2}}{2} \div \frac{\sqrt{2}}{2} = -1$

$\tan 330 = -\frac{1}{2} \div \frac{\sqrt{3}}{2} = -\frac{1}{\sqrt{3}}$

$\tan 360 = \frac{0}{1} = 0$

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$\cot = \frac{\cos}{\sin}$

$\cot 0 = \frac{1}{0}$ تعریف نشده

$\cot 15 = \frac{\sqrt{3}}{2} \div \frac{1}{2} = \sqrt{3}$

$\cot 45 = \frac{\sqrt{2}}{2} \div \frac{\sqrt{2}}{2} = +1$

$\cot 60 = \frac{1}{2} \div \frac{\sqrt{3}}{2} = \frac{1}{\sqrt{3}}$

$\cot 90 = \frac{0}{1} = 0$

$\cot 120 = \frac{-1}{2} \div \frac{\sqrt{3}}{2} = -\frac{1}{\sqrt{3}}$

$\cot 135 = \frac{-\sqrt{2}}{2} \div \frac{\sqrt{2}}{2} = -1$

$\cot 150 = \frac{-\sqrt{3}}{2} \div \frac{1}{2} = -\sqrt{3}$

$\cot 180 = \frac{-1}{0}$ تعریف نشده

$\cot 210 = \frac{-\sqrt{3}}{2} \div \frac{-1}{2} = \sqrt{3}$

$\cot 225 = \frac{-\sqrt{2}}{2} \div \frac{-\sqrt{2}}{2} = +1$

$\cot 240 = \frac{-1}{2} \div \frac{-\sqrt{3}}{2} = \frac{1}{\sqrt{3}}$

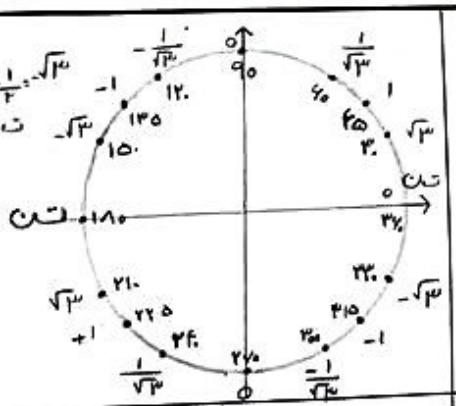
$\cot 270 = \frac{0}{-1} = 0$

$\cot 300 = \frac{+1}{2} \div \frac{-\sqrt{3}}{2} = -\frac{1}{\sqrt{3}}$

$\cot 315 = \frac{+\sqrt{2}}{2} \div \frac{-\sqrt{2}}{2} = -1$

$\cot 330 = \frac{+\sqrt{3}}{2} \div \frac{1}{2} = -\sqrt{3}$

$\cot 360 = \frac{1}{0}$ تعریف نشده



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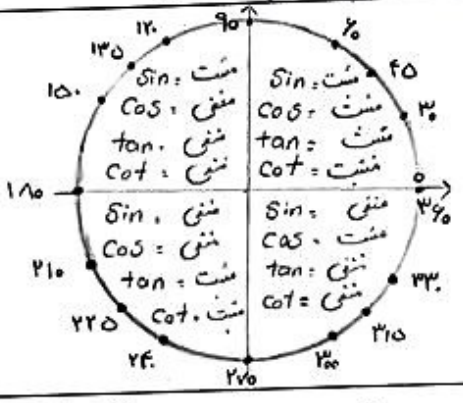

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الف) 60°

$\sin 120^\circ = \frac{\sqrt{3}}{2} \rightarrow 60^\circ \Rightarrow \sin 120^\circ = \frac{\sqrt{3}}{2}$

ب) 210°

$\cos 150^\circ = -\frac{\sqrt{3}}{2} \rightarrow 210^\circ \Rightarrow \cos = -\frac{\sqrt{3}}{2}$

ج) 150°

$\tan = \frac{\sin}{\cos} \rightarrow \tan 120^\circ = \frac{1}{2} \div \frac{\sqrt{3}}{2} = -\frac{1}{\sqrt{3}} \Rightarrow 150^\circ \Rightarrow \tan 150^\circ = \frac{1}{2} \div -\frac{\sqrt{3}}{2} = \frac{-1}{\sqrt{3}}$

د) 315°

$\cot = \frac{\cos}{\sin} \Rightarrow \frac{-\sqrt{2}}{2} \div \frac{\sqrt{2}}{2} = -1 \Rightarrow 315^\circ \Rightarrow \cot = \frac{-\sqrt{2}}{2} \div \frac{\sqrt{2}}{2} = -1$

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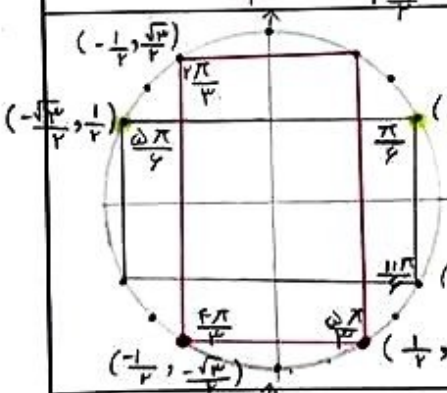
الف) $\frac{\pi}{6}, \frac{5\pi}{6}$

$\cos \frac{2\pi}{3} \rightarrow -\frac{1}{2} \xrightarrow{\text{قرینه}} \frac{1}{2} = \sin \frac{\pi}{6}, \sin \frac{5\pi}{6}$

ب) $\frac{4\pi}{3}$

$\cos \frac{11\pi}{6} = \frac{\sqrt{3}}{2} \xrightarrow{\text{قرینه}} -\frac{\sqrt{3}}{2} = \sin \frac{5\pi}{3}, \frac{4\pi}{3}$



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الف) 180° (π) باعث

$\cot = \frac{\cos}{\sin} = \frac{\frac{\sqrt{2}}{2}}{\frac{-\sqrt{2}}{2}} = -1 \Rightarrow \cos \pi = -1 = \cos 180^\circ = -1$

ب) $60^\circ, 120^\circ$ باعث متقارب

$\cos 150^\circ \Rightarrow \cos \frac{5\pi}{6} = -\frac{\sqrt{3}}{2} \xrightarrow{\text{قرینه}} \frac{\sqrt{3}}{2} \Rightarrow$

$\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}, \sin \frac{2\pi}{3} = \frac{\sqrt{3}}{2} \Rightarrow \sin 60^\circ, \sin 120^\circ = \frac{\sqrt{3}}{2}$