2.48
ב.8

$\sin\alpha = \frac{3}{5}$

$\sin\alpha = \frac{2\sin\frac{\alpha}{2}\cos\frac{\alpha}{2}}{\sin^2\alpha+\cos^2\alpha} = \frac{2\tan\frac{\alpha}{2}}{\tan^2\frac{\alpha}{2}+1}$

$\sin\alpha = \frac{3}{5} = \frac{2x}{1+x^2}$ $\quad$ נסמן $\tan\frac{\alpha}{2}=x$

$3x^2-10x+3=0$

$x=3 \rightarrow \tan\frac{\alpha}{2}=3$

$x=\frac{1}{3} \rightarrow \tan\frac{\alpha}{2}=\frac{1}{3}$

$\tan\alpha = \frac{2\tan\alpha}{1-\tan^2\alpha}$ $\quad$ נציב את הערכים ונחשב

$\tan\frac{\alpha}{2}=\frac{1}{3} \rightarrow \tan\alpha = \frac{\frac{2}{3}}{1-\frac{1}{9}} = \frac{\frac{2}{3}}{\frac{8}{9}} = \frac{18}{24} = \frac{3}{4} \rightarrow$ $\alpha$ נמצאת ב $0 < \alpha < \frac{\pi}{2}$

$\boxed{\tan\frac{\alpha}{2}=3} \rightarrow \tan\alpha = \frac{6}{1-9} = \frac{6}{-8} = -\frac{3}{4} \rightarrow$ $\alpha$ נמצאת ב $\frac{\pi}{2} < \alpha < \pi$