

$17^\circ = (\alpha) \text{rad} = \frac{17 \times \pi}{180} = \frac{17\pi}{180}$
 $150^\circ = (\alpha) \text{rad} = \frac{150 \times \pi}{180} = \frac{5\pi}{6}$
 $0.2 \text{ rad} = (\alpha)^\circ = \frac{0.2 \times 180}{\pi} = \frac{36}{\pi} \approx 11.46^\circ$
 $\frac{\pi}{9} \text{ rad} = (\alpha)^\circ = \frac{1 \times 180}{9} = 20^\circ$

(ف) (ب) (ج) (د)

$1.0 \times 10^{-2} \text{ rad}, \frac{1}{9} \text{ rad}, \frac{\pi}{180}$
 $\frac{150}{9} = \frac{D}{180} \Rightarrow D = \frac{150 \times 180}{9} = 3000$
 $\frac{\pi}{180} = \frac{D}{180} \Rightarrow D = \pi$

$1.0 \times 10^{-2} \text{ rad} + \frac{1}{9} \text{ rad} + \frac{\pi}{180} = 1.0 \times 10^{-2} + \frac{1}{9} + \frac{\pi}{180}$
 $\alpha = 1.0 \times 10^{-2} + \frac{1}{9} + \frac{\pi}{180}$

$\cos 45^\circ \cos 60^\circ - \sin 45^\circ \sin 60^\circ = \cos 105^\circ = \frac{\sqrt{2}}{2} \cdot \frac{1}{2} - \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{2} = \frac{\sqrt{2}}{4} (1 - \sqrt{3})$
 $\tan 45^\circ + \tan 60^\circ + \tan 75^\circ = \frac{1}{1} + \sqrt{3} + 2 + \sqrt{3} = 3 + 2\sqrt{3}$

$\sin 45^\circ = \cos 45^\circ$
 $\cos 45^\circ = \sin 45^\circ$
 $\sin 45^\circ \cos 60^\circ - \cos 45^\circ \sin 60^\circ = \sin 15^\circ$
 $\sin 45^\circ = \frac{\sqrt{2}}{2}$
 $\cos 60^\circ = \frac{1}{2}$
 $\sin 15^\circ = \frac{\sqrt{2}}{2} \cdot \frac{1}{2} - \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{2} = \frac{\sqrt{2}}{4} (1 - \sqrt{3})$

$\frac{\tan 45^\circ (1 - \tan 60^\circ)}{(1 - \tan 45^\circ \tan 60^\circ)} = \frac{\tan 45^\circ (1 - \sqrt{3})}{1 - \sqrt{3}}$
 $\tan 45^\circ = 1$
 $\tan \theta = \sqrt{3} \Rightarrow \theta = 60^\circ$

