

$$\tan(\pi - \alpha) = -\tan \alpha, \quad \tan(\pi + \alpha) = \tan \alpha, \quad \tan(r\pi - \alpha) = -\tan \alpha$$

$$\tan(r\pi + \alpha) = \tan \alpha$$

$$\frac{-\tan \alpha + r(\tan \alpha)}{-\tan \alpha - \tan \alpha} = \frac{r \tan \alpha}{-r \tan \alpha} = \boxed{-1}$$

$$\tan \frac{\pi}{4} = 1 \Rightarrow \tan 1.0 = \tan(90 + 10) = -\frac{1}{a}$$

$$\tan 190 = \tan(180 + 10) = \tan 10 \Rightarrow \tan(r\pi + \alpha) = \tan(180 + 10) = 1$$

$$\frac{r \times \frac{1}{a} + (-\frac{1}{a})}{r(-a) - 1} = \frac{\frac{1}{a}}{-ra - 1} = \frac{-1}{ra^2 + a}$$

$$A = \sin x + c \cdot \cos x, \quad B = \sin x - c \cdot \cos x \Rightarrow \frac{A}{B} + \frac{B}{A} = \frac{A^2 + B^2}{AB} = r$$

$$\Rightarrow A^2 + B^2 = r \Rightarrow AB = \frac{r}{2} \Rightarrow AB = (\sin x + c \cdot \cos x)(\sin x - c \cdot \cos x) =$$

$$-(c \cdot \cos^2 x) \Rightarrow c \cdot \cos^2 x = \frac{r}{2} \Rightarrow \tan^2 x = \frac{1 - c \cdot \cos^2 x}{1 + c \cdot \cos^2 x} = \frac{1 - (\frac{r}{2})}{1 + (\frac{r}{2})} = \boxed{\frac{2-r}{2+r}}$$

$$A = \sin^2 x + c \cdot \cos^2 x, \quad 1 - A = \sin^2 x - c \cdot \cos^2 x + 1 = A - r(1 - A) + 1$$

$$\Rightarrow A - r + rA + 1 = rA - 1$$

$$\sin^2 x + r \cdot \cos^2 x + 1 = A + r(1 - A) - 1 = 1 - A \Rightarrow \frac{rA - 1}{1 - A} = r$$

$$\Rightarrow A = \frac{r}{1+r} \Rightarrow \sin^2 x = \frac{r}{1+r} \Rightarrow \cos^2 x = \frac{1}{1+r} \Rightarrow \tan^2 x = \boxed{\frac{r}{1}}$$

$$c \cdot \cos^2 x = \frac{1 + c \cdot \sin^2 x}{2} \Rightarrow \frac{1 + \frac{r}{1+r}}{2} = \frac{\sqrt{1+r}}{2} \quad (\text{all})$$

$$\sin 45^\circ \Rightarrow \sin^2 x = \frac{1 - c \cdot \cos^2 x}{2} = \frac{1 - (\frac{1}{1+r})}{2} = \frac{r}{2(1+r)}$$

۱. $2 \times 3 = 12 + 7 + \frac{12}{2} = 19$ (الف)

۱. $12 \times 12 - 12 \times 12 = 0$ (ب)

۲. $2 \times 3 = 6 + 12 + \frac{12}{2} = 19$ (الف)

۲. $12 \times 12 - 12 \times 12 = 0$ (ب)

۳. $5 \times \frac{12}{2} = \frac{12}{2} \times 9 = \frac{12 \times 9}{2}$ (الف)

۳. $AB = AC = \frac{12}{2} \times \frac{1}{2} = \frac{12}{4} \Rightarrow P = \frac{12}{4} + 12 + 12 = \frac{12}{4} + \frac{12}{2}$ (الف)

۴. $\frac{1}{2} \times 12 \times \frac{12}{2} = 1 \times \sqrt{12}$ (الف)

۴. $\sqrt{12 + 12 - 1 \times \frac{1}{2}} = \sqrt{2} \Rightarrow P = 12 + 12 + 12 = 36$ (ب)

۵. $\frac{12}{2} = \frac{12 \sqrt{2}}{\sin B} \Rightarrow \sin B = \frac{\sqrt{2}}{2}$
 $\Rightarrow \hat{B} = 45^\circ \Rightarrow C = 180^\circ - 45^\circ - 45^\circ = 90^\circ \Rightarrow B = \frac{\pi}{4}, C = \frac{\pi}{2}$

$12 \sin B = 12 \sqrt{2}$ $12 \sin B = \frac{\sqrt{2}}{2}$