

المثلث

$$1) \quad r \times \frac{a}{12} = \frac{r \times a}{12} = \frac{9a}{12} = \frac{3a}{4}$$

$$2) \quad 120 \times \frac{a}{12} = \frac{120a}{12} = 10a$$

$$3) \quad \frac{a}{12} \times \frac{120}{a} = 10$$

$$4) \quad \frac{a}{9} \times \frac{120}{a} = 13.33$$

$$\frac{\frac{120a}{9}}{\frac{100}{1}} = \frac{120a}{9} \times \frac{1}{100} = \frac{120a}{900} = \frac{12a}{90} = \frac{2a}{15}$$

$$\frac{a}{12} \times \frac{120}{a} = 10 \quad 120 + 120 + 120 = 360$$

$$1) \quad \left(\frac{1}{2} \times \frac{\sqrt{3}}{2} \right) - \left(\frac{\sqrt{3}}{2} \times \frac{1}{2} \right) - (1 + \sqrt{3}) = -1$$

$$2) \quad \frac{\frac{1}{2} + 4\sqrt{3}}{\frac{\sqrt{3}}{2} + \frac{1}{\sqrt{3}}} = \frac{1 + 8\sqrt{3}}{\sqrt{3} + 1}$$

$$\left(-\frac{1}{2} \times \frac{1}{2} \right) + \left(\frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2} \right) = \sin^2 \theta \Rightarrow \sin^2 \theta = \frac{1}{4} \Rightarrow \sin \theta = \frac{1}{2}$$

$$\sin \theta = \frac{1}{2}, \theta < 90^\circ \Rightarrow \theta = 30^\circ$$

$$\tan \theta = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$

$$\frac{\tan \theta (1 - \tan^2 \theta)}{(1 - \cot^2 \theta)} = \frac{\tan \theta}{(1 - \cot^2 \theta)} = \frac{\frac{1}{\sqrt{3}}}{1 - \frac{1}{3}} = \frac{1}{\sqrt{3}} = \tan \theta$$

$$\Rightarrow \tan \theta = \frac{1}{\sqrt{3}} \Rightarrow \tan \theta = \frac{1}{\sqrt{3}}, \theta < 90^\circ$$

$$\theta = 30^\circ$$

