

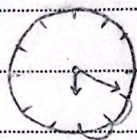
$$f(12) + 4 + 12 = 12 + 4 + 12 = 152$$

$$12 \div 12 = 1 \quad 12 \div 12 = 1$$

$$\text{ب) } \alpha = |\omega \omega m - \omega h| = |\omega \omega (12) - \omega h(12)| = \frac{11}{12} \times 12 - 12 = 11 - 12 = -1$$

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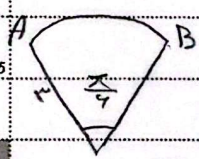
$$12 \div 12 = 1 \quad 12 \div 12 = 1$$



$$f(12) + 12 + 9 = 12 + 9 + 12 = 33$$

$$12 \div 12 = 1 \quad 12 \div 12 = 1$$

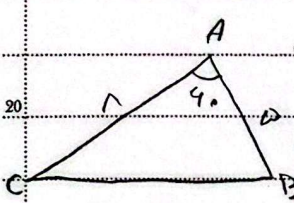
$$\text{ب) } \alpha = |\omega \omega m - \omega h| = |\omega \omega (12) - \omega h(12)| = \frac{11}{12} \times 12 - 12 = 11 - 12 = -1$$



$$\text{ب) } s = \frac{\alpha}{r} R^2 \rightarrow \frac{\pi}{4} \times \frac{1}{r} \times r^2 = \frac{\pi}{4} \times r = \frac{\pi r}{4}$$

$$\text{ب) } r + r + \frac{\pi}{r} = 4 + \frac{\pi}{r}$$

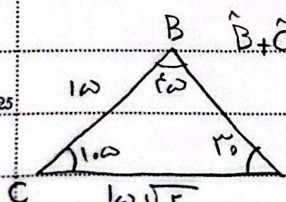
$$\overline{AB} = \alpha R = \frac{\pi}{4} \times r = \frac{\pi r}{4}$$



$$\text{ب) } S = \frac{1}{2} ab \sin \alpha \rightarrow \frac{1}{2} \times a \times b \times \sin 90 = \frac{1}{2} \times \sqrt{r} \times \sqrt{r} = \frac{r}{2}$$

$$\text{ب) } CB = \sqrt{a^2 + b^2 - 2ab \cos \alpha} = \sqrt{4r^2 + r^2 - 2 \times 2r \times r \times \frac{1}{2}} = \sqrt{4r^2 + r^2 - 2r^2} = \sqrt{3r^2} = r\sqrt{3}$$

$$b = a + c + r = 1 + 1 + 1 = 3$$



$$\hat{B} + \hat{C} = 180 - \hat{A} \quad \text{چون } \hat{A} = 180 - \hat{B} - \hat{C} \quad \text{چون } \hat{A} = 180 - \hat{B} - \hat{C}$$

$$\frac{10}{\sin A} = \frac{10\sqrt{2}}{\sin B} \rightarrow \frac{1}{\sin A} = \frac{\sqrt{2}}{\sin B}$$

$$\sin B = \sqrt{2} \sin A \rightarrow \sin B = \sqrt{2} \times \frac{1}{2} = \frac{\sqrt{2}}{2}$$

$$100 - 100 = 0 \rightarrow C = 100 \rightarrow \frac{100}{10} = \frac{100}{10} \rightarrow \frac{100}{10} = \frac{100}{10} = 10$$

$$B = 100 = \frac{\pi}{2}$$

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

$$\tan \frac{\pi}{12} = a \quad A = \frac{r \tan 140^\circ + \tan 160^\circ}{r \tan 140^\circ - \tan 160^\circ} = \frac{r \tan(90^\circ - 10^\circ) + \tan(180^\circ - 20^\circ)}{r \tan(180^\circ - 10^\circ) - \tan(180^\circ - 20^\circ)} = \frac{r \cot 10^\circ - \tan 20^\circ}{r \tan 10^\circ + \tan 20^\circ}$$

$$\frac{\frac{\pi}{12}}{\frac{\pi}{x}} = \frac{D}{12} \rightarrow \frac{1}{12} = \frac{D}{12} \Rightarrow \frac{1}{12} = 12$$

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

$$\frac{\sin \alpha + \cos \alpha}{\sin \alpha - \cos \alpha} + \frac{\sin \alpha - \cos \alpha}{\sin \alpha + \cos \alpha} = \frac{\tan \alpha + 1}{\tan \alpha - 1} + \frac{\tan \alpha - 1}{\tan \alpha + 1} = r$$

$$\frac{\tan^2 \alpha + \tan \alpha + 1}{\tan^2 \alpha - 1} = \frac{r \tan^2 \alpha + r}{\tan^2 \alpha - 1} = \frac{r(\tan^2 \alpha + 1)}{\tan^2 \alpha - 1} = r$$

$$\frac{\tan^2 \alpha + 1}{\tan^2 \alpha - 1} = \frac{r}{r} \rightarrow r \tan^2 \alpha + r = r \tan^2 \alpha - r \rightarrow r + r = \tan^2 \alpha \rightarrow \tan^2 \alpha = 2$$

$$\frac{\sin^2 \alpha + r \cos^2 \alpha + 1}{\sin^2 \alpha + r \cos^2 \alpha - 1} = r \rightarrow \frac{-r \cos^2 \alpha + r}{\cos^2 \alpha} = r \rightarrow -r \cos^2 \alpha + r = r \cos^2 \alpha$$

$$\sin^2 \alpha - \cos^2 \alpha - \cos^2 \alpha + 1 = -r \cos^2 \alpha + r \rightarrow 1 - \cos^2 \alpha = r \rightarrow \sin^2 \alpha = r \rightarrow \cos^2 \alpha = \frac{r}{2}$$

$$\sin^2 \alpha + \cos^2 \alpha + \cos^2 \alpha - 1 = \cos^2 \alpha \rightarrow \sin^2 \alpha = \cos^2 \alpha \rightarrow \tan^2 \alpha = 1 \rightarrow \tan \alpha = \pm 1$$

$$\cos(17r/10) = \frac{\sqrt{r+5r}}{r} \rightarrow \cos(17r/10) = \frac{1+\cos 60^\circ}{2} = \frac{1+\frac{1}{2}}{2} = \frac{3}{4} = \cos(17r/10)$$

$$\sin(4r/10) = \cos(17r/10) \rightarrow \sin(4r/10) = \frac{\sqrt{r+5r}}{r}$$