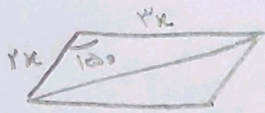


شماره تلفن: ۲۶

مقطع: باز هم رخصت

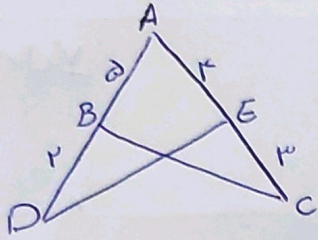
نام و نام خانوادگی: سارا رفیعی (۲۰)

مساحت مثلث = ۵۴ نسبت اضلاع مجاور = $\frac{2}{3}$ زاویه بین دو ضلع مجاور = 150° مساحت مثلثی الاضلاع = ؟ سوال ۱



$$S_{\text{مثلثی الاضلاع}} = 54 \rightarrow 2k \times \frac{1}{2} \times 3k \times \frac{1}{2} = 54 \rightarrow 3k^2 = 54 \rightarrow k^2 = 18 \rightarrow k = 3\sqrt{2}$$

$$\text{مساحت مثلثی الاضلاع} = 1 \cdot k = 1 \cdot (3\sqrt{2}) = 3\sqrt{2} \quad (5)$$



سوال ۲ $S_{\triangle ABC} - S_{\triangle ADE} = 11\sqrt{5}$ $\tan \hat{A} = ?$ $\hat{A} = \text{زاویه حاده}$

$$\left. \begin{aligned} S_{\triangle ABC} &= \frac{1}{2} \sin A \times 2x \times 2y \\ S_{\triangle ADE} &= \frac{1}{2} \sin A \times x \times y \end{aligned} \right\} \rightarrow S_{\triangle ABC} - S_{\triangle ADE} = 11\sqrt{5} \rightarrow (5)$$

$$\left(\frac{1}{2} \sin A \times 4xy \right) - \left(\frac{1}{2} \sin A \times xy \right) = 11\sqrt{5} \rightarrow \frac{1}{2} \sin A (4y - y) = 11\sqrt{5} \rightarrow \sin A \times y = 22\sqrt{5}$$

$$\rightarrow \sin A = \frac{1}{y} \rightarrow \begin{cases} \hat{A} = 30^\circ \checkmark \\ \hat{A} = 150^\circ \times \end{cases} \quad \hat{A} = 30^\circ \rightarrow \tan \hat{A} = \tan 30^\circ = \frac{\sqrt{3}}{3} \quad (5)$$

$$\frac{1}{\sqrt{\cos^2 a}} - \tan a = \frac{1 + \sin a}{|\cos a|}$$

$$\frac{|\sin a|}{\cos a} = -\frac{1}{\cot a}$$

علی قدر لیت استی
معنی

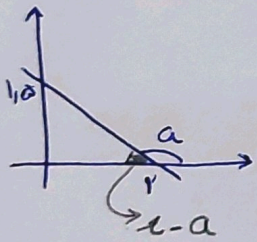
سوال ۳

$$\frac{1}{\sqrt{1 - \sin a}} = \tan a \rightarrow \frac{\sin a}{|\cos a|} = -\frac{\sin a}{\cos a} \Rightarrow \cos a < 0$$

$$\hookrightarrow \frac{|\sin a|}{\cos a} = -\frac{\sin a}{\cos a} \Rightarrow \sin a < 0$$

(5) البرعوم

سوال ۴ $\tan\left(\frac{\pi}{4} - a\right) = ?$



$$\tan(\pi - a) = \frac{1 \cdot 5}{2} = \frac{5}{2} \rightarrow \tan a = -\frac{5}{2} \quad (5)$$

$$\tan\left(\frac{\pi}{4} - a\right) = \cot a = \frac{-5}{2} \quad (5)$$

سوال ۵ $\frac{3\cos(248^\circ) - 2\sin(158^\circ)}{\sin(202^\circ) - \cos(242^\circ)} = ?$

$$248^\circ = \frac{3\pi}{4} - 22$$

$$102^\circ = \pi + 22$$

$$158^\circ = \pi - 22$$

$$242^\circ = \frac{3\pi}{4} + 22$$

$$\frac{3\cos(248^\circ) - 2\sin(158^\circ)}{\sin(202^\circ) - \cos(242^\circ)} = \frac{3\cos\left(\frac{3\pi}{4} - 22\right) - 2\sin(\pi - 22)}{\sin(\pi + 22) - \cos\left(\frac{3\pi}{4} + 22\right)} = \frac{-3\sin 22 - 2\sin 22}{-\sin 22 - \sin 22} \quad (5)$$

$$= \frac{-5\sin 22^\circ}{-2\sin 22^\circ} = \frac{5}{2} = 2.5 \quad (5)$$

$a = \text{رابع}$ $\cos a = \frac{r}{r}$ $\sin\left(\frac{\pi}{r} + a\right) - \sin(a - \pi) = ? \rightarrow (-\sin a) = \sin a$ سوال 9

$\sin a = - \rightarrow \sin a = -\frac{\sqrt{5}}{r}$
 $\cos a = + \rightarrow \cos a = \frac{r}{r}$

$$\frac{\sin\left(\frac{\pi}{r} + a\right) - \sin(a - \pi)}{|\tan^2 a - 1|} = \frac{\frac{r + \sqrt{5}}{r} - \frac{1 + r + \sqrt{5}}{r}}{\frac{1}{r}} = \frac{1 + r + \sqrt{5}}{r}$$

$\sin a = r \cos a$ $a = \text{ثلاثي}$ $\cos a = ?$ سوال 7

$\sin^2 a + \cos^2 a = 1$

$\sin a = r \cos a \rightarrow \sin^2 a = r^2 \cos^2 a$

$\rightarrow r^2 \cos^2 a + \cos^2 a = 1 \rightarrow \Delta \cos^2 a = 1 \rightarrow \cos^2 a = \frac{1}{\Delta}$
 $\rightarrow \cos a = \pm \frac{1}{\sqrt{\Delta}} \xrightarrow{\text{بالتالي}} \cos a = \frac{1}{\sqrt{\Delta}}$

$rx + (m^2 - 1)y = r^2$ $m = \text{اقلان}$

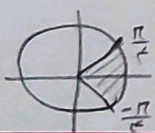
$\rightarrow \frac{-rm}{m^2 - 1} = \sqrt{r^2} \rightarrow \sqrt{r^2} m^2 + rm - \sqrt{r^2} = 0 \xrightarrow{\text{بالتالي}} m^2 + rm - r = 0 \rightarrow (m+r)(m-r) = 0$

$\rightarrow \begin{matrix} m = 1 \\ m = -r \end{matrix} \xrightarrow{\div \sqrt{r}} \begin{matrix} m = \frac{1}{\sqrt{r}} \\ m = -\frac{r}{\sqrt{r}} \end{matrix} \xrightarrow{\text{اقلان}} \frac{r}{\sqrt{r}}$

$-\frac{\pi}{r} < x < \frac{\pi}{r}$ $\tan\left(\frac{\pi}{r} - x\right) = \frac{1-m}{r+m}$ $m = \text{مجهول}$

$\tan\left(\frac{\pi}{r} - x\right) = \frac{1 - \tan x}{1 + \tan x} = \frac{1-m}{r+m} \rightarrow r+m - \tan x m - r \tan x = 1-m + \tan x - \tan x m$

$\rightarrow 1 + rm = r \tan x \rightarrow \frac{1+rm}{r} = \tan x$



$\Rightarrow -1 < \tan x < 1 \rightarrow -1 < \frac{1+rm}{r} < 1 \rightarrow \sqrt{r} < 1+rm < \sqrt{r} \Rightarrow -r < m < r$

$\tan(4^\circ) \cos(4^\circ) + \tan(4^\circ) \sin(4^\circ) =$

$\rightarrow (-\tan 4^\circ)(-\cos 4^\circ) + (-\tan 4^\circ)(\sin 4^\circ) = (\tan 4^\circ)(\sin 4^\circ) - (\tan 4^\circ)(\sin 4^\circ) = 0$