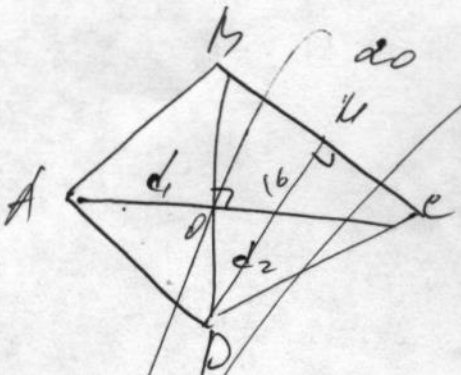


$S_{ромб} = BC \cdot OH = 16 \cdot 20 = 320\ см^2$

$S_{ромб} = \frac{1}{2} d_1 \cdot d_2 \Rightarrow d_1 \cdot d_2 = 640 \Rightarrow d_1 = \frac{640}{d_2}$

$\triangle BOC$ – прямоуг. по т. Пифагора

$OB^2 + OC^2 = BC^2$

$\frac{d_1^2}{4} + \frac{d_2^2}{4} = 400 \mid \cdot 4 \Rightarrow d_1^2 + d_2^2 = 1600$

$\frac{409600}{d_2^2} + d_2^2 = 1600 \mid \cdot d_2^2 \Rightarrow$

$d_2^4 - 1600 d_2^2 + 409600 = 0$

пусть $t = d_2^2 \Rightarrow t^2 - 1600t + 409600 = 0$.

$D = 2560000 - 1638400 = 960^2$

$t_1 = \frac{1600 + 960}{2} = 1280$

$t_2 = \frac{1600 - 960}{2} = 320.$

$d_{21}^2 = 1280$

$d_{21} = 16\sqrt{5} \Rightarrow d_{11} = \frac{640}{16\sqrt{5}} = 8\sqrt{5}$

$d_{22} = 8\sqrt{5} \Rightarrow d_{12} = \frac{640}{8\sqrt{5}} = 16\sqrt{5}.$

Ответ: $d_1 = 8\sqrt{5}$, $d_2 = 16\sqrt{5}$

1) $1 + tg^2\alpha = \frac{1}{\cos^2\alpha}$

$1 + 8 = \frac{1}{\cos^2\alpha} \Rightarrow \cos^2\alpha = \frac{1}{9}$

$\cos\alpha = -\sqrt{\frac{1}{9}} = -\frac{1}{3}$

$6\cos\alpha = -\frac{6}{3} = -2$

2) $\frac{14 \cdot 2\sin 46 \cos 46}{\cos 46 \cdot \sin 46} = 28$

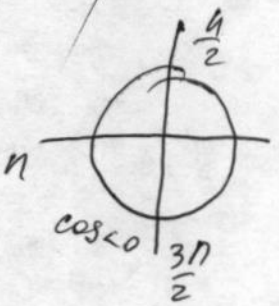
3) $5\sin^2\alpha + 13\cos^2\alpha = 6 \mid \cdot \cos^2\alpha$

$5tg^2\alpha + 13 = \frac{1}{\cos^2\alpha}$

$1 + tg^2\alpha = \frac{1}{\cos^2\alpha} \Rightarrow \cos^2\alpha = \frac{1}{1+tg^2\alpha}$

$5\sin^2\alpha + 5\cos^2\alpha + 8\cos^2\alpha = 6 \Rightarrow 8\cos^2\alpha = 1 \Rightarrow \frac{8}{1+tg^2\alpha} = 1 \Rightarrow$

$8 = 1 + tg^2\alpha \Rightarrow tg^2\alpha = 7$



4) У-я $\sin<0$ при $\pi < \alpha < 2\pi$., то угол будет в 3 четв.

$\cos\alpha = -\sqrt{1 - 0{,}64} = -0{,}6$

$-20\cos\alpha = -20 \cdot 0{,}6 = -12$

$-20\cos\alpha = -20 \cdot (-0{,}6) = 12$

$-\frac{22\pi}{4} + \frac{\pi}{4} = -\frac{21}{4}\pi.$

$\frac{32\pi}{4} - \frac{\pi}{4}$

5) $\frac{7\cos\alpha - 6\sin\alpha \mid : \cos\alpha}{3\sin\alpha - 5\cos\alpha \mid : \cos\alpha} = \frac{7 - 6tg\alpha}{3tg\alpha - 5} = \frac{7-6}{3-5} = -\frac{1}{2}$

6) $\frac{8}{-\sin\frac{\pi}{4} \cdot \cos\frac{\pi}{4}} = \frac{8}{-\frac{\sqrt{2}}{2} \cdot \frac{\sqrt{2}}{2}} = -16$