## *Mashqlar*

**300.** Agar:

1) $\cos\alpha = \frac{5}{13}$ va $\frac{3\pi}{2} < \alpha < 2\pi$ bo'lsa, $\sin\alpha$ va $\text{tg}\alpha$ ni;

2) $\sin\alpha = 0{,}8$ va $\frac{\pi}{2} < \alpha < \pi$ bo'lsa, $\cos\alpha$ va $\text{tg}\alpha$ ni;

3) $\cos\alpha = -\frac{3}{5}$ va $\frac{\pi}{2} < \alpha < \pi$ bo'lsa, $\sin\alpha$, $\text{tg}\alpha$ va $\text{ctg}\alpha$ ni;

4) $\sin\alpha = -\frac{2}{5}$ va $\pi < \alpha < \frac{3\pi}{2}$ bo'lsa, $\cos\alpha$, $\text{tg}\alpha$ va $\text{ctg}\alpha$ ni;

5) $\text{tg}\alpha = \frac{15}{8}$ va $\pi < \alpha < \frac{3\pi}{2}$ bo'lsa, $\sin\alpha$ va $\cos\alpha$ ni;

6) $\text{ctg}\alpha = -3$ va $\frac{3\pi}{2} < \alpha < 2\pi$ bo'lsa, $\sin\alpha$ va $\cos\alpha$ ni hisoblang.

**301.** Asosiy trigonometrik ayniyat yordamida tengliklar bir vaqtda bajarilishi yoki bajarilmasligini aniqlang:

1) $\sin\alpha = 1$ va $\cos\alpha = 1$;                2) $\sin\alpha = 0$ va $\cos\alpha = -1$;

3) $\sin\alpha = -\frac{4}{5}$ va $\cos\alpha = -\frac{3}{5}$;        4) $\sin\alpha = \frac{1}{3}$ va $\cos\alpha = -\frac{1}{2}$.

**302.** Tengliklar bir vaqtda bajarilishi mumkinmi:

1) $\sin\alpha = \frac{1}{5}$ va $\mathrm{tg}\,\alpha = \frac{1}{\sqrt{24}}$;     2) $\mathrm{ctg}\,\alpha = \frac{\sqrt{7}}{3}$ va $\cos\alpha = \frac{3}{4}$?

**303.** Aytaylik, $\alpha$ to'g'ri burchakli uchburchakning burchaklaridan biri bo'lsin. Agar $\sin\alpha = \frac{2\sqrt{10}}{11}$ bo'lsa, $\cos\alpha$ va $\mathrm{tg}\,\alpha$ ni toping.

**304.** Teng yonli uchburchakning uchidagi burchagining tangensi $2\sqrt{2}$ ga teng. Shu burchakning kosinusini toping.

**305.** Agar $\cos^4\alpha - \sin^4\alpha = \frac{1}{8}$ bo'lsa, $\cos\alpha$ ni toping.

**306.** 1) $\sin\alpha = \frac{2\sqrt{3}}{5}$ bo'lsa, $\cos\alpha$ ni toping;

2) $\cos\alpha = -\frac{1}{\sqrt{5}}$ bo'lsa, $\sin\alpha$ ni toping.

**307.** $\mathrm{tg}\,\alpha = 2$ ekanligi ma'lum. Ifodaning qiymatini toping:

1) $\frac{\mathrm{ctg}\,\alpha + \mathrm{tg}\,\alpha}{\mathrm{ctg}\,\alpha - \mathrm{tg}\,\alpha}$;     2) $\frac{\sin\alpha - \cos\alpha}{\sin\alpha + \cos\alpha}$;

3) $\frac{2\sin\alpha + 3\cos\alpha}{3\sin\alpha - 5\cos\alpha}$;     4) $\frac{\sin^2\alpha + 2\cos^2\alpha}{\sin^2\alpha - \cos^2\alpha}$.

**308.** $\sin\alpha + \cos\alpha = \frac{1}{2}$ ekanligi ma'lum. **1)** $\sin\alpha \cos\alpha$; **2)** $\sin^3\alpha + \cos^3\alpha$ ifodalarning qiymatlarini toping.

**309.** Tenglamani yeching:

**1)** $2\sin x + \sin^2 x + \cos^2 x = 1$;     **2)** $\sin^2 x - 2 = \sin x - \cos^2 x$;

**3)** $2\cos^2 x - 1 = \cos x - 2\sin^2 x$;     **4)** $3 - \cos x = 3\cos^2 x + 3\sin^2 x$.