Нахождение синуса , косинуса , тангенса , котангенса

7.7. (а) $\sin t = \frac{4}{5}$ $\frac{\pi}{2} < t < \pi$

I четверть

$\cos t = \sqrt{1 - \sin^2 t} = \sqrt{1 - \left(\frac{4}{5}\right)^2} = \sqrt{1 - \frac{16}{25}} =$

$= \sqrt{\frac{25-16}{25}} = \sqrt{\frac{9}{25}} = \frac{3}{5}$

т. к. I чет.

$$tgt = \frac{\sin t}{\cos t} = \frac{4}{5} : \frac{3}{5} = \frac{4}{5} \cdot \frac{5}{3} = \frac{4}{3}$$

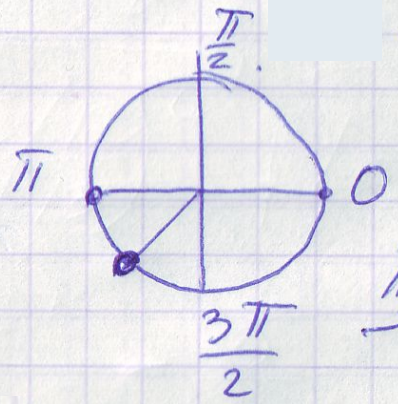
т.к I чет
(знак +)

$$ctgt = \frac{\cos t}{\sin t} = \frac{3}{5} : \frac{4}{5} = \frac{3}{4}$$

(т.к I чет.
знак +)

7.7(2) $\sin t = -0{,}28 = \pi < t < \frac{3\pi}{2}$.

$= -\frac{28}{100} = -\frac{7}{25}$.



III чет.

$\cos t = \sqrt{1 - \sin^2 t} = \sqrt{1 - \left(-\frac{7}{25}\right)^2}$

$\sqrt{1 - \frac{49}{625}} = \sqrt{\frac{625-49}{625}} = \sqrt{\frac{576}{625}} = \frac{24}{25}$.

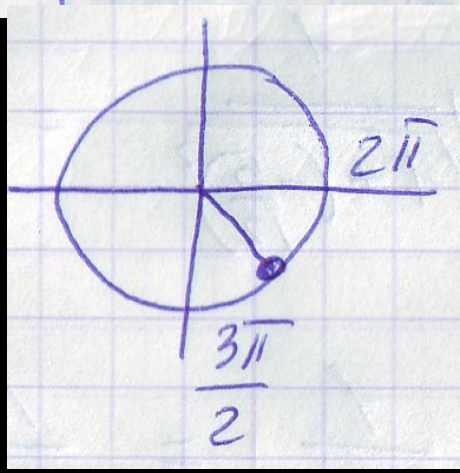
Т.к. III чет. $\cos t < 0$

$$tgt = \frac{\sin t}{\cos t} = -\frac{7}{25} : \left(-\frac{24}{25}\right) = \frac{7}{25} \cdot \frac{25}{24} = \frac{7}{24}$$

т.к. III ч.
знак +

$$ctgt = \frac{24}{7}.$$

7.86. $\cos t = 0,6$ $\quad \frac{3\pi}{2} < t < 2\pi$



$\sin t = \sqrt{1-\cos^2 t} = \sqrt{1-0,6^2} = \sqrt{1-0,36} =$

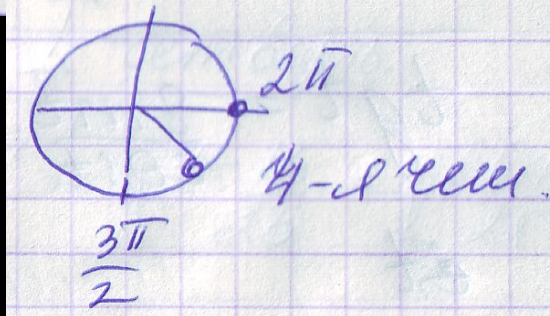
$= [redacted] 0,8$

$$tgt = \frac{\sin t}{\cos t} = \frac{-0,8}{0,6} = -\frac{8}{6}$$

$$ctgt = \frac{\cos t}{\sin t} = -\frac{6}{8}$$

7.92 $\operatorname{tg} t = -\frac{5}{12}$, $\frac{3\pi}{2} < t < 2\pi$

$$\cos t = \frac{1}{\sqrt{1+\operatorname{tg}^2 t}}.$$



$$\cos t = \frac{1}{\sqrt{1+\left(-\frac{5}{12}\right)^2}} = \frac{1}{\sqrt{1+\frac{25}{144}}} = \frac{1}{\sqrt{\frac{144+25}{144}}} = \frac{1}{\sqrt{\frac{169}{144}}}$$

$$= \frac{1}{\frac{13}{12}} = \frac{12}{13}$$

т. к. 4-я чет. "+".

$$\sin t = \sqrt{1 - \cos^2 t} =$$

$$\sin t = \sqrt{1 - \cos^2 t} =$$

$$= \sqrt{\frac{169 - 144}{169}} = \sqrt{\frac{25}{169}} = \frac{5}{13}$$

т.к 4-я чет. знак "-"

$$ctgt = \frac{1}{tgt} = -\frac{1}{\frac{5}{12}} = -\frac{12}{5}.$$