

Нахождение синуса , косинуса ,
тангенса , котангенса

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

I remember

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

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

т.к. I rem.

$$\operatorname{tg} t = \frac{\sin t}{\cos t} = \frac{\frac{4}{5}}{\frac{3}{5}} = \frac{4}{5} \cdot \frac{5}{3} = \frac{4}{3}$$

т.к. \angle четв.
(знак +)

$$\operatorname{ctg} t = \frac{\cos t}{\sin t} = \frac{\frac{3}{5}}{\frac{4}{5}} = \frac{3}{5} \cdot \frac{5}{4} = \frac{3}{4}$$

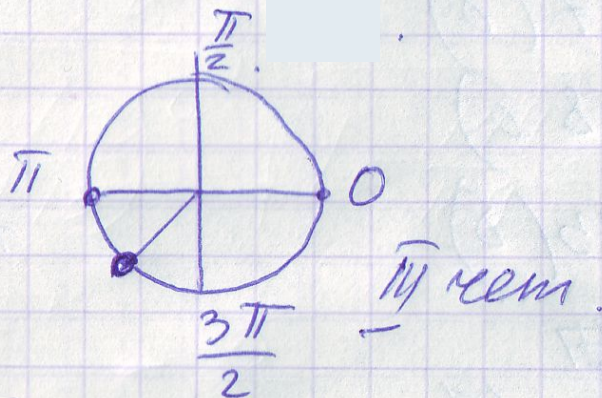
(т.к. \angle четв.
знак +)

7.7(2)

$$\sin t = -0,28 =$$

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

$$\pi < t < \frac{3\pi}{2}$$



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

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

т.к. π чет. // — //

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

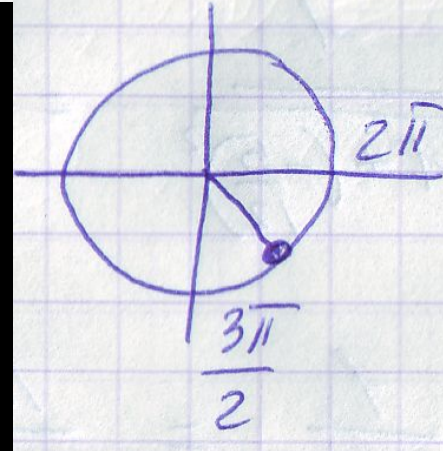
т.к. $\sin t < 0$.
знак +

$$\operatorname{ctg} t = \frac{24}{7}$$

7.86.

$$\cos t = 0,6$$

$$\frac{3\pi}{2} < t < 2\pi$$



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

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

$$= \blacksquare 0,8$$

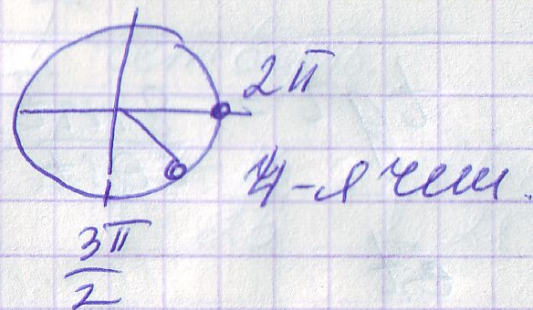
$$\operatorname{tg} t = \frac{\sin t}{\cos t} = \frac{-0,8}{0,6} = -\frac{8}{6}$$

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

7.92

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

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



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

$$= \frac{1}{\sqrt{1 + \frac{25}{144}}} = \frac{1}{\sqrt{\frac{144 + 25}{144}}} = \frac{1}{\sqrt{\frac{169}{144}}}$$

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

Т.к. 4-й квад.
знак "+"

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

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

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

Т.к. 4-й член
знака "-"

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