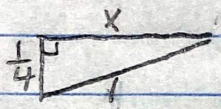
360° of Trig, pg. M4-100

① $\tan\theta = \frac{\sin\theta}{\cos\theta}$

②



$x^2 = 1^2 - (\frac{1}{4})^2$

$x^2 = 1 - \frac{1}{16}$

$x^2 = \frac{15}{16}$

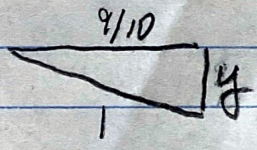
$x = \frac{\sqrt{15}}{\sqrt{16}} = \frac{\sqrt{15}}{4}$

$\cos\theta = -\frac{\sqrt{15}}{4}$

$\tan\theta = \frac{-\frac{1}{4}}{-\frac{\sqrt{15}}{4}} = -\frac{1}{4} \div \frac{4}{\sqrt{15}} = \frac{1}{\sqrt{15}}$

$\boxed{\tan\theta = \frac{\sqrt{15}}{15}}$

③



$y^2 = 1^2 - (\frac{9}{10})^2$

$y^2 = \frac{19}{100}$

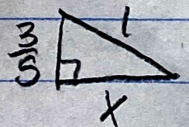
$y = \frac{\sqrt{19}}{10}$

$\sin\theta = -\frac{\sqrt{19}}{10}$

$\tan\theta = -\frac{\sqrt{19}}{10} \cdot \frac{10}{9}$

$\boxed{\tan\theta = -\frac{\sqrt{19}}{9}}$

④



$x^2 = 1^2 - (\frac{3}{5})^2$

$x^2 = 1 - \frac{9}{25}$

$x^2 = \frac{16}{25}$

$x = \frac{4}{5}$

$\cos\theta = -\frac{4}{5}$

$\tan\theta = \frac{3}{5} \cdot -\frac{5}{4}$

$\boxed{\tan\theta = -\frac{3}{4}}$