Which of the following equations are equivalent?

1. $y = 2x + 5$

2. $-2x + y - 5 = 0$ $\quad -2x+y-5=0$

3. $\frac{-2x}{5} + \frac{y}{5} = 1$

$\frac{-2x+y=5}{5}$

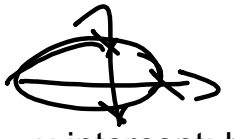
$\frac{-2x}{5} + \frac{y}{5} = 1$

Symmetric Form

$\frac{x}{a} + \frac{y}{b} = 1$

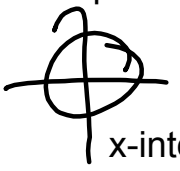
can be used for any oblique (diagonal) line that does **not** pass through (0, 0)

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



Slope: $-\frac{b}{a}$

y-intercept: b



x-intercept: a

$y = 2x + 5$

1. Get the equation in function form.
2. Multiply/divide the equation so that the constant = 1
3. Rearrange the x term so that the 1 is on its own.

$-\frac{2x}{5} + \frac{y}{5} = 1$

$\div$ reciprocal

$\frac{x}{\frac{5}{-2}} + \frac{y}{5} = 1$

$c = \frac{5}{-2}$ $b = 5$

$y = 2x + 5$

$\frac{4}{3}(-2x + y) = \frac{3}{4}\left(\frac{4}{5}\right)$

$-8x + y = 1$

$\frac{x}{1} \quad \frac{1}{1}$

$-\frac{2x}{5} = \left(-\frac{2}{5}\right)(x)$

$x \div \left(\frac{5}{-2}\right)$

Slope: -2

$\frac{x}{5} + \frac{y}{5} = 1$

Slope: $-\frac{b}{c}$

$-5 \div \left(\frac{5}{-2}\right)$

$-5\left(\frac{-2}{5}\right)$

e.g. p. 95

5. a) Write the equation of the line in

i) function form,

ii) general form, and

iii) symmetric form, given the following:

slope = 8 y-intercept: -3