

$$3) y = \frac{1}{2}x - \frac{3}{2}$$

$$(0, -\frac{3}{2})$$

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

$$\text{slope} = \frac{1}{2} \quad \frac{1}{\text{slope}} = -2$$

$$y = -2x + c$$
$$-\frac{3}{2} = -2(0) + c$$

$$-\frac{3}{2} = c$$

$$y = -2x - \frac{3}{2} \quad \text{and} \quad y = \frac{1}{2}x + \frac{5}{2}$$

$$2 \left(-2x - \frac{3}{2} = \frac{1}{2}x + \frac{5}{2} \right)$$

$$-4x - 3 = x + 5$$

$$-5x = 8$$

$$x = -\frac{8}{5}$$

$$y = \frac{1}{2} \left(-\frac{8}{5} \right) + \frac{5}{2}$$

$$y = \frac{-8}{10} + \frac{25}{10}$$

$$y = \frac{17}{10}$$

$$\left(-\frac{8}{5}, \frac{17}{10} \right)$$

$$(0, -\frac{3}{2})$$

$$d = \sqrt{\left(0 + \frac{8}{5}\right)^2 + \left(-\frac{3}{2} - \frac{17}{10}\right)^2}$$

$$d = \sqrt{\frac{64}{25} + \frac{1024}{100}}$$

$$d = \sqrt{\frac{256}{100} + \frac{1024}{100}}$$

$$d = \sqrt{\frac{1280}{100}} = \frac{16\sqrt{5}}{10} = \left(\frac{8\sqrt{5}}{5} \right)$$