$$D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

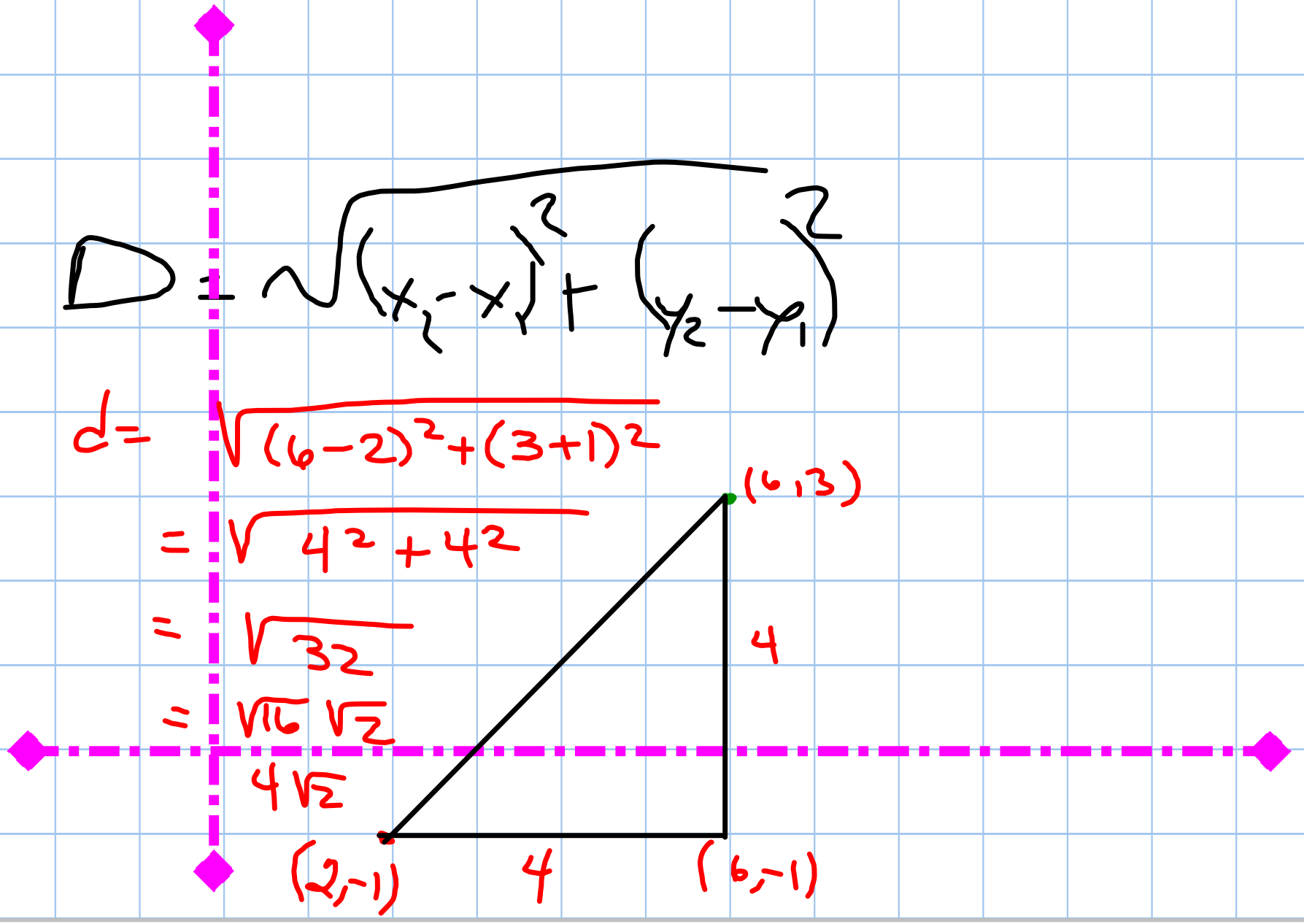
$$d = \sqrt{(6-2)^2 + (3+1)^2}$$

$$= \sqrt{4^2 + 4^2}$$

$$= \sqrt{32}$$

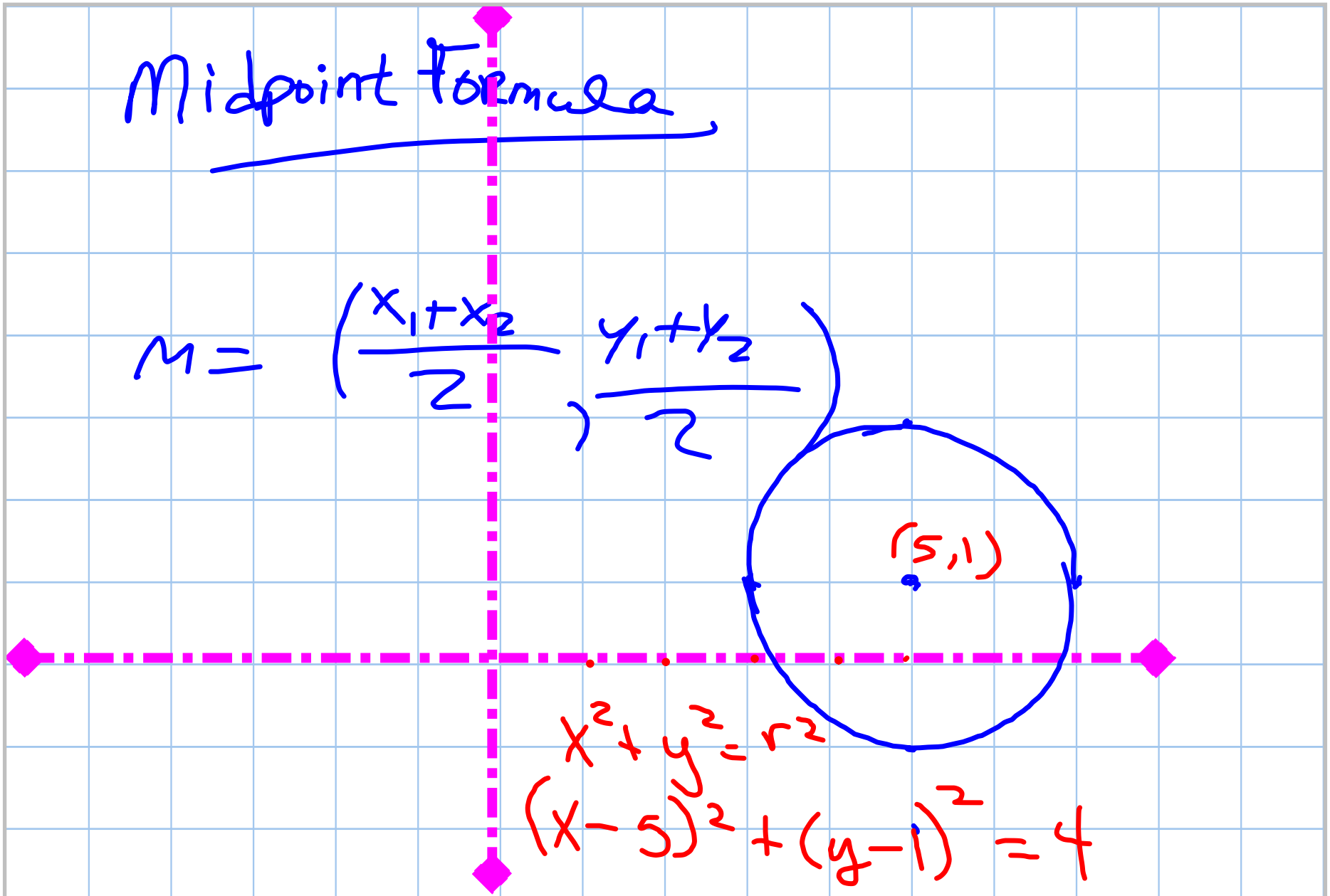
$$= \sqrt{16}\sqrt{2}$$

$$4\sqrt{2}$$



Midpoint Formula

$$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$



$$x^2 + y^2 = r^2$$

$$(x-5)^2 + (y-1)^2 = 4$$

Graph w/ a chart ⇒ no fractions

$$2x - 5y = 30$$

$$-5y = -2x + 30$$

$$\frac{-5y}{-5} = \frac{-2x}{-5} + \frac{30}{-5}$$

$$y = \frac{2}{5}x - 6$$

x	-5	0	5	10
y				

Intercepts

$2x-3y=12$

x int: $2x-3(0)=12$

$2x=12$

$x=6$

$(6,0)$

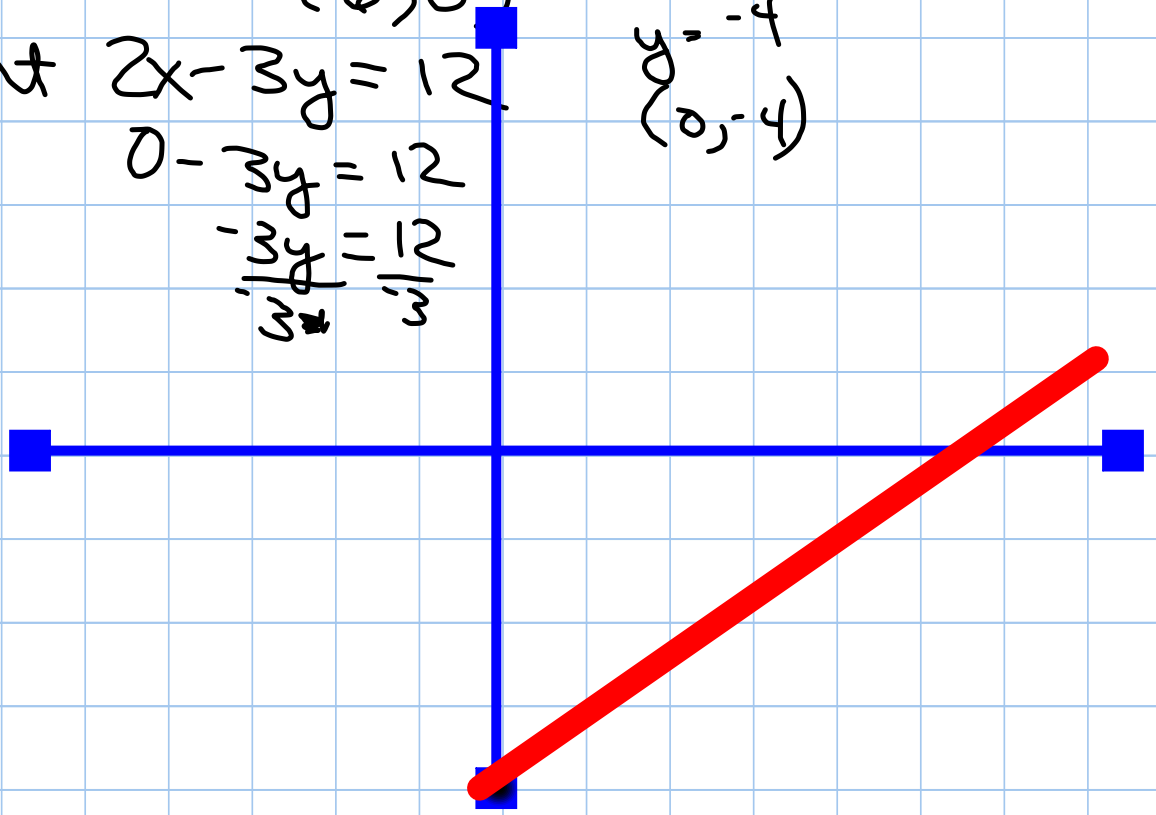
y int $2x-3y=12$

$0-3y=12$

$\frac{-3y}{-3}=\frac{12}{-3}$

$y=-4$

$(0,-4)$



Point-Slope Formula

$y - y_1 = m(x - x_1)$

(2, 3) (-3, 6)

$m = \frac{6-3}{-3-2} = \frac{3}{-5}$

Slope: $\frac{y_2 - y_1}{x_2 - x_1}$

$y - y_1 = m(x - x_1)$

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

$y - 3 = -\frac{3}{5}x + \frac{6}{5}$

$y = -\frac{3}{5}x + \frac{6}{5} + 3$

$y = -\frac{3}{5}x + \frac{21}{5}$