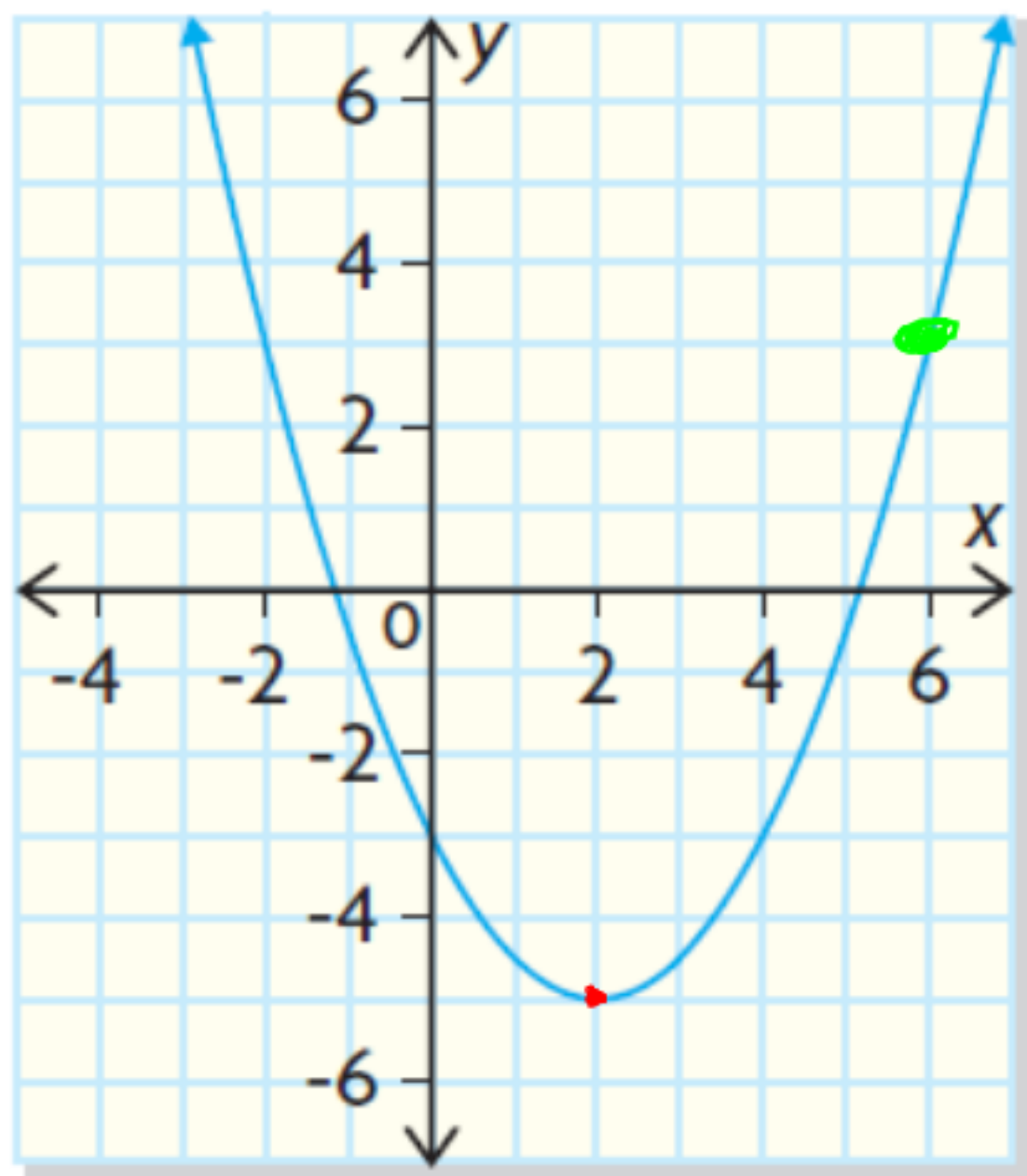


Mathematics 10D

5.4 – Quadratic Models Using Vertex Form

Mr. D. Hagen



$(2, -5)$
h k

$(6, 3)$
x y

$$y = a(x - h)^2 + k$$

$$3 = a(6 - 2)^2 - 5$$

$$3 = a(16) - 5 + 5$$

$$\frac{8}{16} = \frac{a(16)}{16}$$

$$\frac{1}{2} = a$$

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

The parabola of $y=x^2$ is stretched by a factor of 3, translated by 5 units to the left and 2 units up. It is also reflected in the x-axis. State the equation of the parabola.

$$y = a(x-h)^2 + k$$

$$y = -3(x+5)^2 + 2$$

