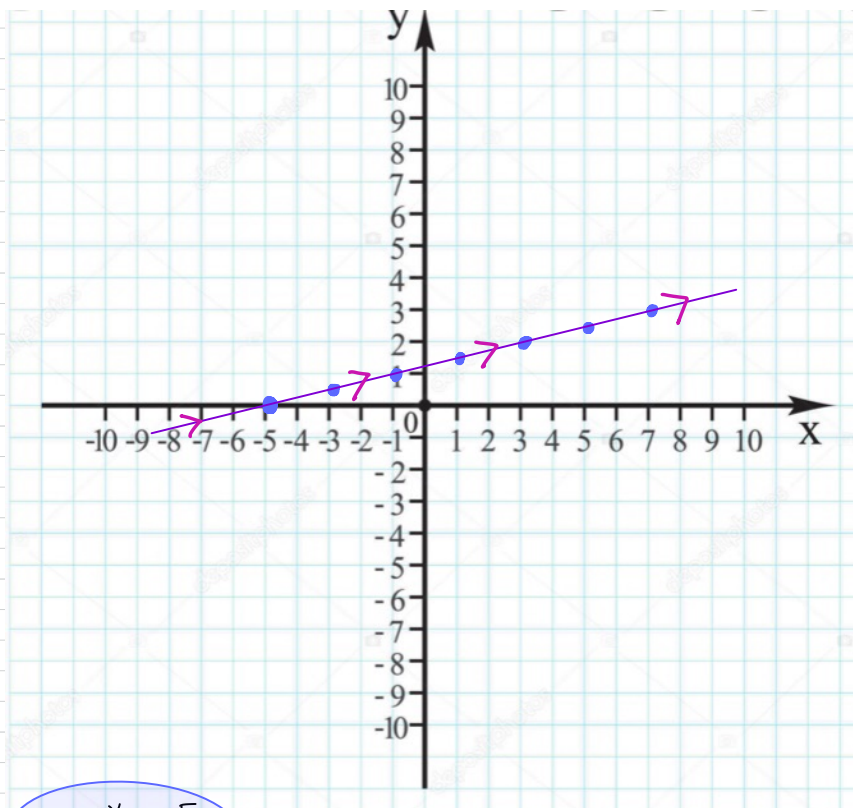


HW #20 Final Answers

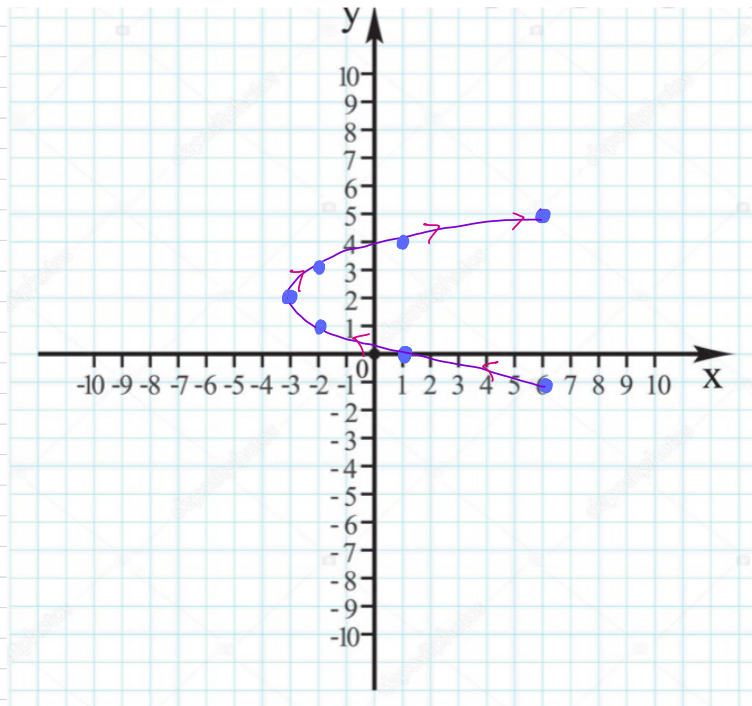
1(a)



1(b)

$y = \frac{x}{4} + \frac{5}{4}$ Matches Sketch

2(a)

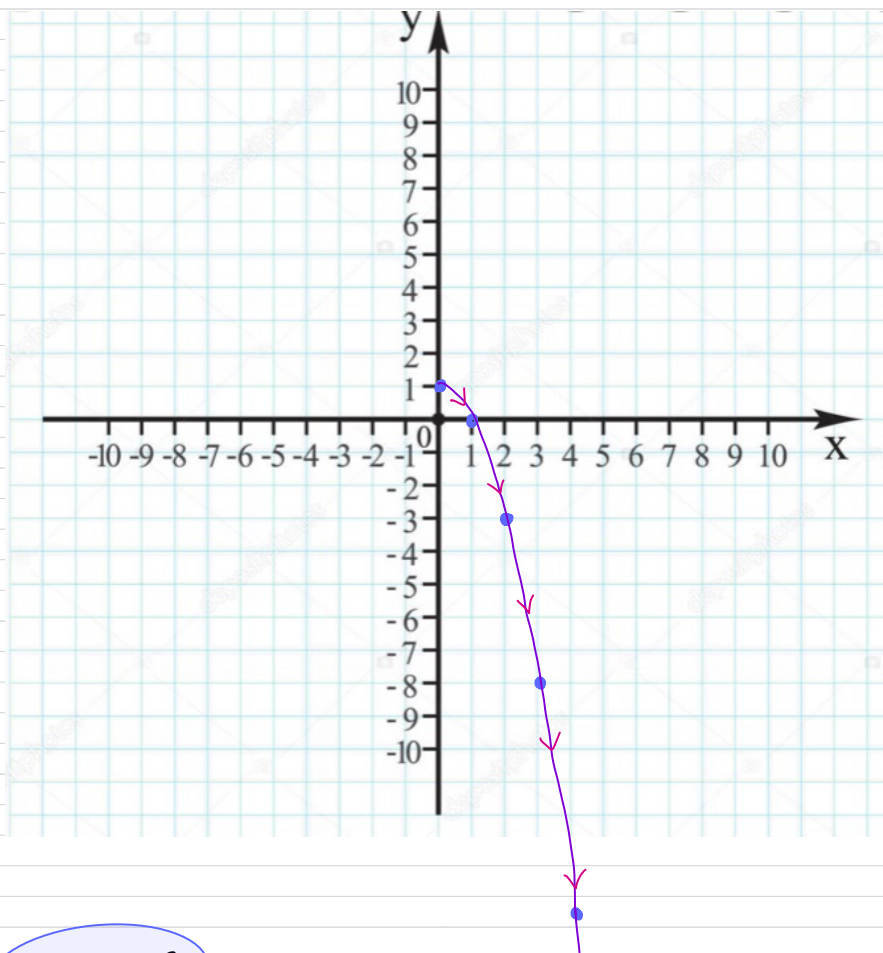


2(b) $x = (y-2)^2 - 3$ OR $y = \pm \sqrt{x+3} + 2$

with Restrictions $-3 \leq x \leq 6$ OR $-1 \leq y \leq 5$

Note: need to clarify that the trajectory does not follow the entire parabola.

3(a)



3(b)

$$y = 1 - x^2$$

Natural Restrictions: Keep $t \geq 0$ under the Square Root

here Keep $x \geq 0$ on the entire potential parabola $y = 1 - x^2$

4.

$$y = 24x - 39$$

5.

$$y = \pi x + \pi^2$$

6.

$$\text{Arc length} = e^2 + 1$$

7.

$$\text{Arc length} = \sqrt{2}(e^\pi - 1)$$