

Solution Worksheet #1

$$\textcircled{1} \textcircled{a} \quad x^3 + 8 = 0 \Rightarrow (x+2)(x^2 - 2x + 4) = 0$$

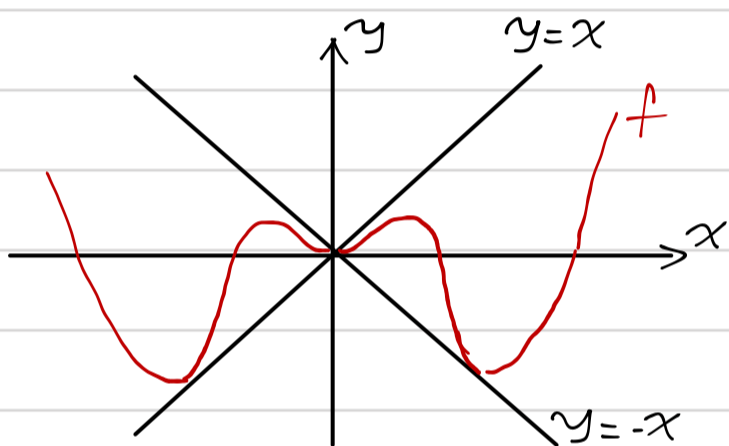
$$(x-1)^2 + 3 > 3 \text{ can't be } 0$$

$$\text{Then } D = \{x \in \mathbb{R} / x \neq -2\}$$

$$\textcircled{b} \quad x^2 - x + 4 = 0 \Rightarrow x = \frac{1 \pm \sqrt{(-1)^2 - 4(1)(4)}}{2} \text{ is not real}$$

$$\text{Then } D = \mathbb{R}$$

②



$$\text{Range} = \mathbb{R}$$



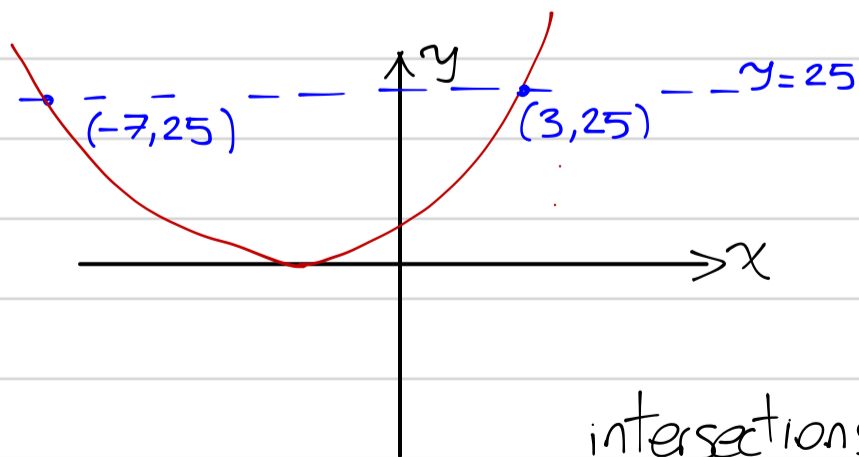
$$\text{Range} = [-1, 1]$$

$$\textcircled{3} \quad a(1)^b = 1,6 \Rightarrow a = 1,6$$

$$1,6(2)^b = 6,4 \Rightarrow 2^b = 4 \Rightarrow b = 2$$

At $t=5$. Omar predicts $(1,6)(5)^2 = 40 \text{ m}$

④



$$h(x) = 25$$

$$(x+2)^2 = 25$$

$$x+2 = \pm 5$$

$$\Rightarrow x = 3 \text{ or } -7$$

intersections $(3, 25), (-7, 25)$

⑤ Slope of $L = 8$

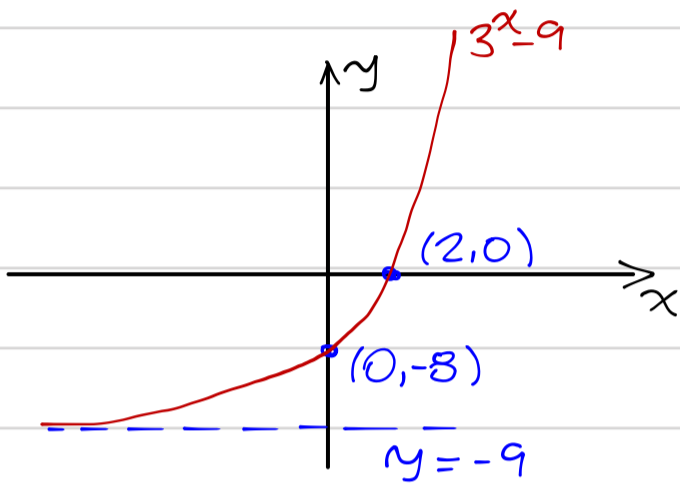
Then $B = L(-2) = -16 - m \Rightarrow m = -24$

⑥ Amplitude of $M = 4$

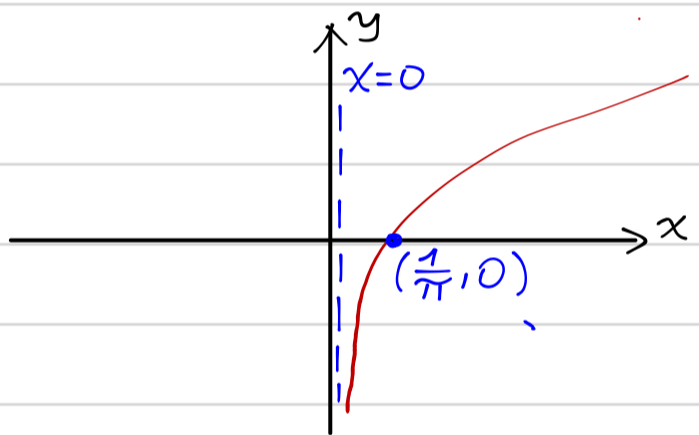
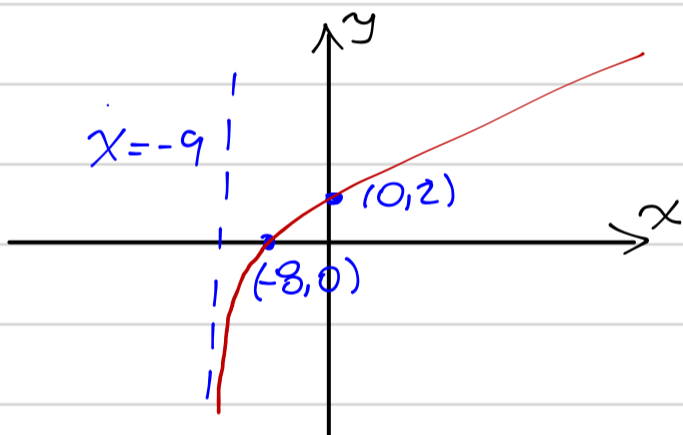
$\Rightarrow 4 = \frac{2\pi}{n}$, so $n = \frac{\pi}{2}$

Period of $M = 2\pi/n$

⑦



⑧



(Reflect with respect to $y = x$)