

Week 3 practice problem Answers

1/2/19

Practice problem #1

$$y = x^2 + x - 2$$

Sketch:

vertex: $(-0.5, -2.25)$

Y-int: ~~1~~ -2

x-int: ~~0~~ $-2, 1$

axis of symmetry: (-0.5)

Domain: $x \in \mathbb{R}$

Range: $y \geq -2.25 \in \mathbb{R}$

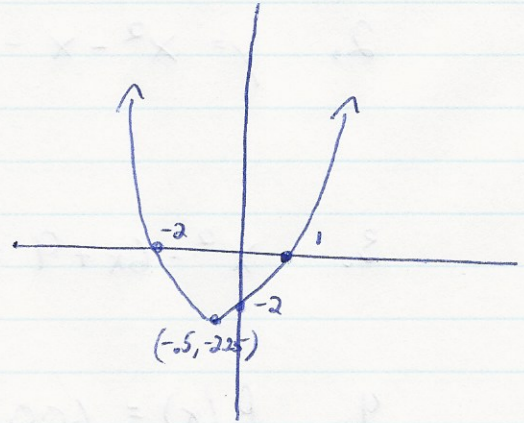


Table of values

x	y
-3	4
-2	0
-1	-2
0	-2
1	0
2	4
3	10

\rightarrow x-int

} same point indicates axis of symmetry is between $x = -1$ and $x = 0$

\therefore axis of symmetry is at $x = -0.5$

vertex? $y = (-0.5)^2 + (-0.5) - 2$
 $y = -2.25$
 $(-0.5, -2.25)$

y-int

x-int

Practice Problem #2 - with Desmos

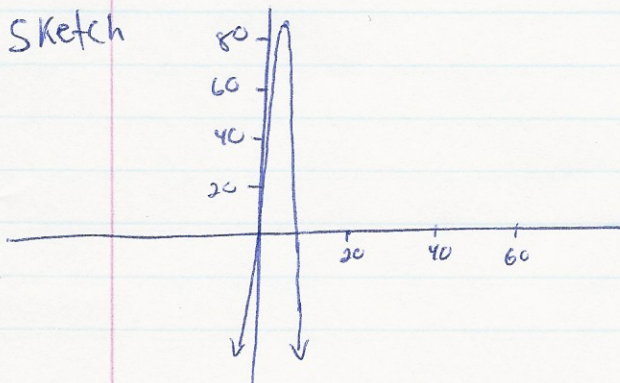
$$h(t) = -9(t-3)^2 + 83$$

Max height = 83 m

seconds till water impact = 6.037

Height at burnout = 74 m

Sketch



Practice problems part 2 → Use Desmos!

1. $3x^2 - 11x - 4 = 0$

Zeros: $-.33, 4$

2. $y = x^2 - x - 20$

Zeros: $-4, 5$

3. $x^2 - 6x + 9 = 0$

Zero: 3

4. $R(x) = 600 - 6x^2$

x value of -10 or 10 indicate the zeroes (roots of the function). So a price increase of $\$10$ or a price decrease of $\$10$ results in no revenue.