

2.3 Functions - Using Notation

Day 2 (1)

Ex 6

$$f(x) = -x^2 + 5x - 3 \quad g(x) = 2x + 3$$

(a) Find $f(2)$

$$f(2) = -(2)^2 + 5(2) - 3$$

$$= -4 + 10 - 3$$

$$f(2) = \boxed{3}$$

(b) $g(1) = 2(1) + 3 = 2 + 3 = \boxed{5}$

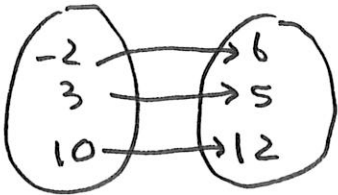
Ex 7

(b) find $f(3)$

$$\{ (-3, 5) (0, 3) (3, 1) (6, -1) \}$$

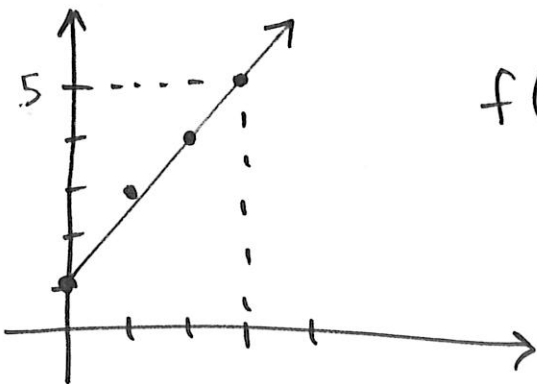
$$f(3) = 1$$

(c)



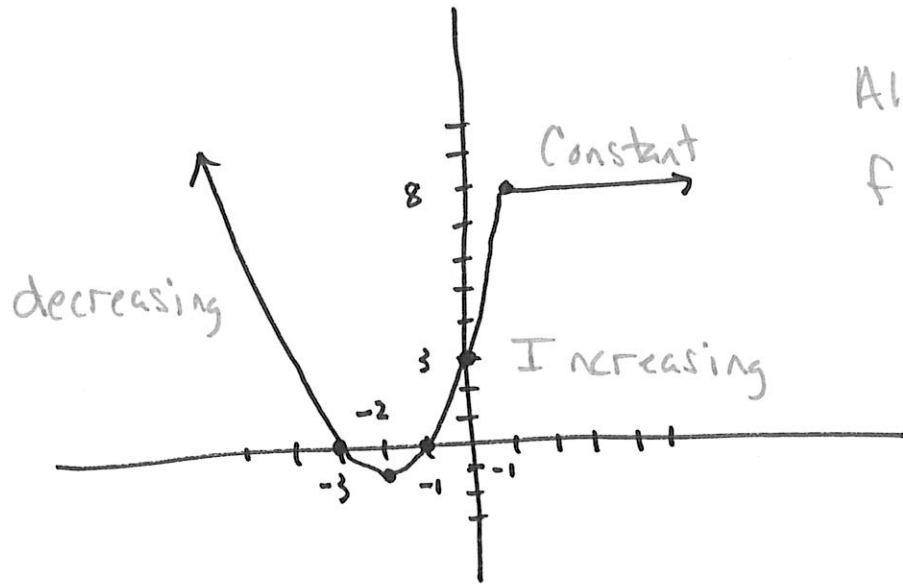
$$f(3) = \boxed{5}$$

(d)



$$f(3) = \boxed{5}$$

Ex 9 Determine the largest open intervals of the domain over which the function is increasing, decreasing, constant.



Always move
from Left to Right \rightarrow

The y-values are decreasing $(-\infty, -2)$

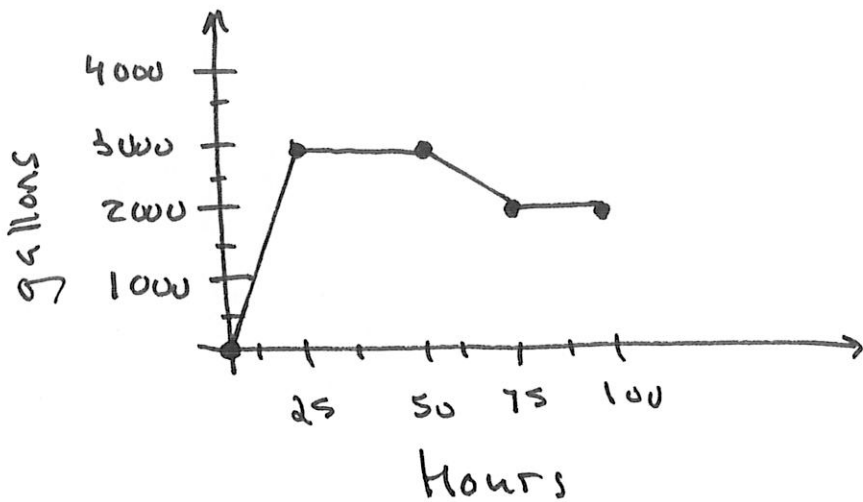
The y-values are increasing $(-2, 1)$

The y-values are constant $(1, \infty)$

2.3

Ex 10

Day 2 (3)



$g(t)$ is the number of gallons of water in a swimming pool, at time t in hours.

- (a) Max gallons in pool? 3000 gallons
- (b) How long is water level increasing? 25 hours
 Decreasing? 25 hours
 Constant? $25 + 25 = \underline{50 \text{ hours}}$
- (c) How many gallons in pool at 90 hours?
2000 gallons
- (d) What could be happening?
 Pool is empty, then filled over the next 25 hours. It remains full for 25 hours. Then the pool is drained for 25 hours. Then remains at 2000 gallons for 25 hours.