

Ch. 4 Study Guide

① $D = \{-1, 2, 4, 6\}$

② $R = \{-2, -4, 6, -8\}$

③

x	$y = 5x$	y
0	$y = 5(0)$	0
1	$y = 5(1)$	5
2	$y = 5(2)$	10
3	$y = 5(3)$	15
4	$y = 5(4)$	20

⑤

x	$y = 10 - 2x$	y
-8	$y = 10 - 2(-8)$	26
-4	$y = 10 - 2(-4)$	18
0	$y = 10 - 2(0)$	10
4	$y = 10 - 2(4)$	2
8	$y = 10 - 2(8)$	-6

⑦ F - all x's are different

⑨ NF - 2's repeat (x's repeat)

⑪ F - all x's are different

⑬ $h(x) = x(x-4)$ $h(3)$

$$h(3) = 3(3-4)$$

$$= 3(-1)$$

$$\boxed{h(3)} = -3$$

↑
y = Range

⑮ For $f(x) = 4x$; find $f(x+c)$

$$f(x+c) = 4(x+c)$$

$$\boxed{f(x+c) = 4x + 4c}$$

(17)	n	$f(n) = 2n(n+1)$	$n, f(n)$
	0	$2(0)(0+1) = 0$	(0, 0)
	1	$2(1)(1+1) = 4$	(1, 4)
	2	$2(2)(2+1) = 12$	(2, 12)
	3	$2(3)(3+1) = 24$	(3, 24)
	4	$2(4)(4+1) = 40$	(4, 40)

(19)	x	y		
+2	1	2	+5	$\frac{\Delta y}{\Delta x} = \frac{5}{2} = 2.5$
+1	3	7	+2	
	4	5		$\frac{\Delta y}{\Delta x} = \frac{2}{1} = 2$

Non-Linear

(21)	x	y		
+1	-2	6	-1	$\frac{\Delta y}{\Delta x} = \frac{-1}{1} = -1$
+2	-1	5	-2	
+1	1	3	-1	$\frac{\Delta y}{\Delta x} = \frac{-2}{2} = -1$
	2	2		$\frac{\Delta y}{\Delta x} = \frac{-1}{1} = -1$

Linear

(23) Graph

$$m = \frac{3}{4}$$

$$b = -2$$

$$\text{Equation: } y = \frac{3}{4}x - 2$$

positive slope

$$D: (-\infty, \infty)$$

$$R: (-\infty, \infty)$$

Function

$$m = -\frac{1}{2}$$

$$b = 4$$

$$y = -\frac{1}{2}x + 4$$

negative slope

$$D: (-\infty, \infty)$$

$$R: (-\infty, \infty)$$

25 C

27 D

29 $f(x) = \frac{1}{3}x - 4$ for $f(-2)$

$$f(-2) = \frac{1}{3}(-2) - 4$$

$$= \frac{1}{3}\left(\frac{-2}{1}\right) - 4$$

$$= \frac{-2}{3} - \frac{4 \times 3}{1 \times 3}$$

$$= \frac{-2}{3} - \frac{12}{3}$$

$$= \boxed{\frac{-14}{3}} \quad B$$

31 $|x-5| \geq 3$ ^{Greater OR}

$$x-5 \geq 3 \quad x-5 \leq -3$$

$$+5 \quad +5 \quad +5 \quad +5$$

$$x \geq 8 \quad \text{or} \quad x \leq 2$$



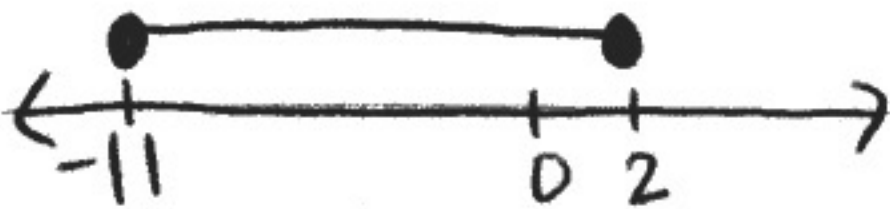
33 $|2f+9| \leq 13$ ^{and}

$$2f+9 \leq 13 \quad 2f+9 \geq -13$$

$$-9 \quad -9 \quad -9 \quad -9$$

$$\frac{2f \leq 4}{2 \quad 2} \quad \frac{2f \geq -22}{2 \quad 2}$$

$$f \leq 2 \quad \text{and} \quad f \geq -11$$



(35)

and
↓

$$|3x-5| < 14$$

$$3x-5 < 14$$
$$+5 \quad +5$$

$$\frac{3x}{3} < \frac{19}{3}$$

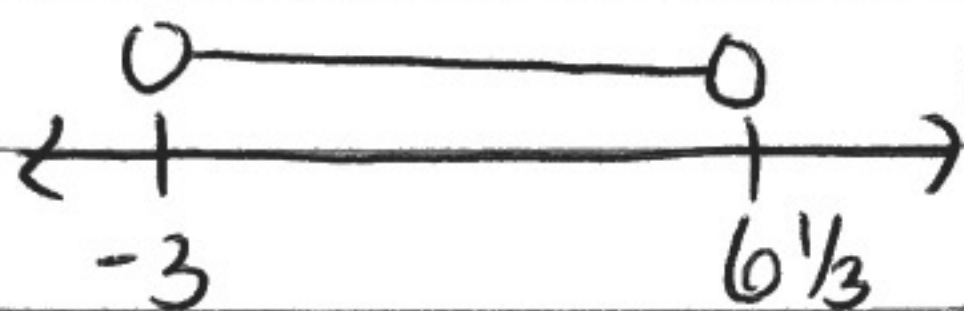
$$x < 6\frac{1}{3}$$

$$3x-5 > -14$$

$$+5 \quad +5$$

$$\frac{3x}{3} > \frac{-9}{3}$$

$$x > -3$$



$$\{x \mid x > -3\} \cap \{x \mid x < 6\frac{1}{3}\}$$