

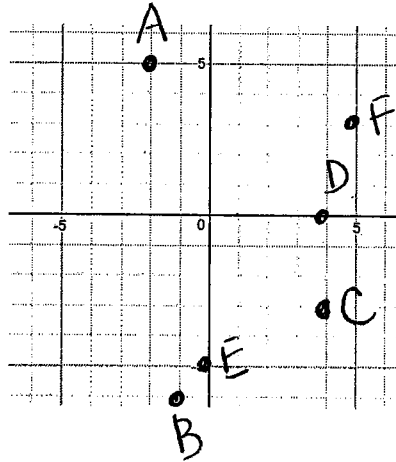
Name Key

Block _____

4.1 Worksheet

1. Plot the ordered pairs

- A (-2, 5)
- B (-1, -6)
- C (4, -3)
- D (4, 0)
- E (0, -5)
- F (5, 3)



2. Determine the domain and range for each relation

a) $\{(-3, 4), (-2, 4), (0, -2), (1, 1)\}$

b) $\{(1, -2), (2, 1), (1, 2), (3, 1)\}$

D $\{-3, -2, 0, 1\}$

D $\{1, 2, 3\}$

R $\{-2, 1, 4\}$

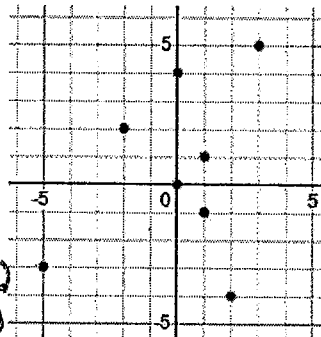
R $\{-2, 1, 2\}$

3. Convert each relation from its current representation to the one indicated.

a) ordered pairs

b) table of values

x	y
-5	12
-1	-1
0	8
1	6
4	10



x	y
-5	-3
-2	2
0	4
0	0
1	1
1	-1
2	-4
3	5

$\{(-5, 12), (-1, -1), (0, 8), (1, 6), (4, 10)\}$

4. Represent the relation with a table of values, ordered pairs, and graphically.

$y = 2x - 5$

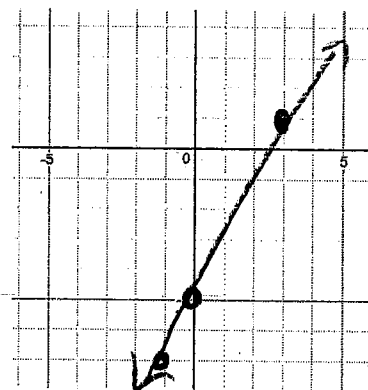
i) table of values

ii) ordered pairs

iii) graphically

x	y
-1	-7
0	-5
3	1

$\{(-1, -7), (0, -5), (3, 1)\}$



5. Indicate which relations are linear.

- a) $y = 5$ Linear b) $y = x^2 + 4x + 3$ Not c) $-x + y = 2$ linear
 d) $y = 3\sqrt{x}$ Not e) $y = \frac{1}{2}x + 6$ Linear

6. Which table of values represents a linear relation?

a)

x	y
0	-10
1	0
2	10
3	20
4	30
5	40

Handwritten notes: Brackets on the right side of the table indicate constant differences of +10 between consecutive y-values. Brackets on the left side indicate constant differences of +1 between consecutive x-values.

Linear
Variation is constant

b)

x	y
0	2
1	4
2	8
3	16
4	32
5	64

Handwritten notes: Brackets on the right side of the table indicate increasing differences: +2, +4, +8, +16, +32. Brackets on the left side indicate constant differences of +1 between consecutive x-values.

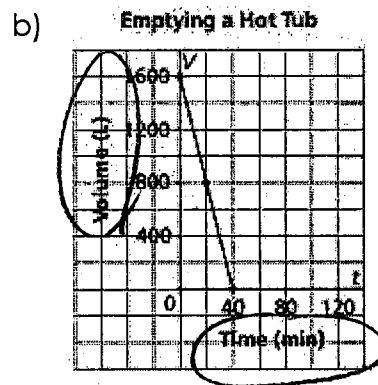
Not Linear
Variation Not constant

7. For each relation, indicate the dependent variable and the independent variable.

a)

n	A
0	1
1	3
2	9
3	27
4	81

n independent variable
A dependent variable



Time independent
Volume Dependent

c) area of a circle : $A = \pi r^2$

r independent
A dependent

8. Simplify each expression

a) $7x + 5 - x - 9$

$$6x - 4$$

c) $4x - 3(x - y)$

$$4x - 3x + 3y$$

$$x + 3y$$

e) $10 - 3(2a + 3) + 4(a - 6)$

$$10 - 6a - 9 + 4a - 24$$

$$-2a - 23$$

b) $3x + 2(x + y)$

$$3x + 2x + 2y$$

$$5x + 2y$$

d) $-4a - 3b - (2a + 5b)$

$$-4a - 3b - 2a - 5b$$

$$-6a - 8b$$

f) $(x + 7) + 5(x + 3) + 8(2x - 1)$

$$x + 7 + 5x + 15 + 16x - 8$$

$$22x + 14$$

9. Determine the value of y

a) $y = 0.4x$ when $x = 25$

$$y = 0.4(25)$$

$$y = 10$$

b) $y = \frac{x}{20}$ when $x = 75$

$$y = \frac{75}{20} \quad y = \frac{15}{4}$$

c) $y = 4x - 7$ when $x = -8$

$$y = 4(-8) - 7$$

$$y = -32 - 7$$

$$y = -39$$

d) $y = 5 - 3x$ when $x = -4$

$$y = 5 - 3(-4)$$

$$y = 5 + 12$$

$$y = 17$$

10. Solve each equation

a) $3x - 4 = 8$

$$3x = 12$$

$$x = 4$$

b) $11 = 3r - 4$

$$+4 \quad +4$$

$$15 = 3r$$

$$5 = r$$

c) $6 - 2x = -2$

$$-2x = -8$$

$$x = 4$$