Quadratic Relationships with Tables Classwork Activity

Name KEY

Date _____ Period _____

Use the tables to answer the following questions.

A.

x	y	
−3	−1	2
−2	1	2
−1	3	2
0	5	2
1	7	2
2	9	2
3	11	

B.

x	y
−4	13
−3	8
−2	5
−1	4
0	5
1	8
2	13

1. What patterns do you notice in the table A?
The x-values increase by 1 and the y-values increase by 2.

2. What patterns do you notice in the table B?
The x-values increase by 1 by y-values don't have a constant change; The y-values repeat & are symmetric

3. What type of relationship is represented in each table? Explain.
Table A: Linear - has a constant rate of change
Table B: Quadratic - y-values repeat and are symmetric

4. How can you find the vertex of a parabola from a table? Give the coordinates of the vertex of the quadratic relationship represented above. Vertex: (−1, 4)
It's the least value in the table that doesn't repeat; it's the turning point for the symmetry

5. Is the vertex a maximum or a minimum point? How do you know?
It's a minimum because it is the least y-value. All other y-values are greater than it.

6. How can you find the equation of the axis of symmetry of a parabola from a table?
It is the x-value of the vertex

7. Does the table below represent a linear or quadratic relationship? How do you know?

x	y	
0	0	1
1	1	3 (+2)
2	4	5 (+2)
3	9	7 (+2)
4	16	9 (+2)
5	25	11 (+2)
6	36	

2nd difference

It is quadratic. The 2nd difference is a constant (the same)

Identify whether the table represents a linear or quadratic relationship. Then state:

a. coordinates of the vertex
b. equation of the axis of symmetry
c. max/min
d. domain and range

8.

x	y	
−6	18	
−5	4	−14, +4
−4	−6	−10, +4
−3	−12	−6, +4
−2	−14	−2, +4
−1	−12	+2, +4
0	−6	+6, +4

Linear / Quadratic

a. Vertex: (−2, −14)

b. AOS: $x = -2$

c. max/min: min

d. Domain: $\mathbb{R}$ Range: $\mathbb{R} \geq -14$

9.

x	f(x)	
−6	58	
−5	30	−28, +8
−4	10	−20, +8
−3	−2	−12, +8
−2	−6	−4, +8
−1	−2	+4, +8
0	10	+12, +8

Linear / Quadratic

a. Vertex: (−2, −6)

b. AOS: $x = -2$

c. max/min: min

d. Domain: $\mathbb{R}$ Range: $\mathbb{R} \geq -6$

10.

x	y	
−3	−5	
−2	−3	+2
−1	−1	+2
0	1	+2
1	3	+2
2	5	+2
3	7	+2

Linear / Quadratic $y = 2x + 1$

a. Vertex: _____

b. AOS: _____

c. max/min: _____

d. Domain: _____ Range: _____

11.

x −1	y 3	
0	2	−1, +2
1	3	+1, +2
2	6	+3, +2
3	11	+5, +2
4	18	+7, +2
5	27	+9, +2
6	38	+11, +2

→ work backwards to find vertex

Linear / Quadratic

a. Vertex: (0, 2)

b. AOS: $x = 0$

c. max/min: min

d. Domain: $\mathbb{R}$ Range: $\mathbb{R} \geq 2$