Patterns of Change in Two Variables   KEY

Problem 1–6

x	y
0	0
1	1
2	2
3	3
10	10

1) What is the pattern of change in the y-variables?   Arithmetic
2) Graph the relationship.
3) What type of relationship exists between x and y?   Linear
4) Give an equation to describe the relationship between x and y. $y = x$
5) Give the x and y ints.   Both: (0,0)
6) Complete the table.

Problem 7–12

x	y
0	0
1	2
2	4
3	6
4	8
5	10
10	20

7) What is the pattern of change in the y-variables?   Arithmetic
8) Graph the relationship.
9) What type of relationship exists between x and y?   Linear
10) Give an equation to describe the relationship between x and y. $y = 2x$
11) Give the x and y ints.   Both: (0,0)
12) Complete the table.

Problem 13–18

x	y
0	2
1	3
2	4
3	5
4	6
15	17

13) What is the pattern of change in the y-variables?   Arithmetic
14) Graph the relationship.
15) What type of relationship exists between x and y?   Linear
16) Give an equation to describe the relationship between x and y. $y = x$
17) Give the x and y ints.   Both: (0,0)
18) Complete the table.

Problem 19–24

x	y
0	1
1	2
2	4
3	8
10	1024

19) What is the pattern of change in the y-variables?   Geometric
20) Graph the relationship.
21) What type of relationship exists between x and y?   Exponential
22) Give an equation to describe the relationship between x and y. $y = 2^x$
23) Give ints. x-int: none, y-int: (0, 1)
24) Complete the table.

Problem 25–30

x	y
0	1
1	3
2	9
3	27
4	81
15	!!!

25) What is the pattern of change in the y-variables?   Geometric
26) Graph the relationship.
27) What type of relationship exists between x and y?   Exponential
28) Give an equation to describe the relationship between x and y. $y = 3^x$
29) Give ints. x-int: none, y-int: (0, 1)
30) Complete the table.

Problem 31–36

x	y
0	-1
1	1
2	3
3	5
4	7
5	9
18	35

31) What is the pattern of change in the y-variables?   Arithmetic
32) Graph the relationship.
33) What type of relationship exists between x and y?   Linear
34) Give an equation to describe the relationship between x and y. $y = 2x - 1$
35) Give ints. x: (1/2, 0),   y: (0, -1)
36) Complete the table.

Problem 37–42

x	y
-2	-4
-1	-3
0	-2
1	-1
2	0
6	4
12	10

37) What is the pattern of change in the y-variables?   Arithmetic
38) Graph the relationship.
39) What type of relationship exists between x and y?   Linear
40) Give an equation to describe the relationship between x and y. $y = x - 2$
41) Give ints. x: (2, 0),   y: (0, -2)
42) Complete the table.

Problem 43–48

x	y
-1	
0	1
1	2
2	4
3	
4	16
8	

43) What is the pattern of change in the y-variables?   Geometric
44) Graph the relationship.
45) What type of relationship exists between x and y?   Exponential
46) Give an equation to describe the relationship between x and y. $y = 2^x$
47) Give ints. x-int: none, y-int: (0, 1)
48) Complete the table.

Problem 49–54

x	y
-1	2
0	0
1	-2
2	-4
3	-6
5	-10
8	-16

49) What is the pattern of change in the y-variables?   Arithmetic
50) Graph the relationship.
51) What type of relationship exists between x and y?   Linear
52) Give an equation to describe the relationship between x and y. $y = 2x$
53) Give the x and y ints.   Both: (0,0)
54) Complete the table.

Problem 55–60

x	y
-3	
-2	-7
-1	-4
0	-1
1	2
6	
10	

55) What is the pattern of change in the y-variables?   Arithmetic
56) Graph the relationship.
57) What type of relationship exists between x and y?   Linear
58) Give an equation to describe the relationship between x and y. $y = 3x - 1$
59) Give ints. x: (1/3, 0),   y: (0, -1)
60) Complete the table.

x	y
-1	.67
0	1
1	1.5
2	2.25
3	3.375
4	5.06
7	17.09

61) What is the pattern of change in the y-variables?   Geometric
62) Graph the relationship.
63) What type of relationship exists between x and y?   Exponential
64) Give an equation to describe the relationship between x and y. $y = 1.5^x$
65) Give ints. x-int: none, y-int: (0, 1)
66) Complete the table.

x	y
-2	2
-1	1
0	0
1	1
2	2
5	5
11	11

67) What is the pattern of change in the y-variables?   Kind of Arithmetic
68) Graph the relationship.
69) What type of relationship exists between x and y?   Absolute Value
70) Give an equation to describe the relationship between x and y. $y = |x|$
71) Give the x and y ints.   Both: (0,0)
72) Complete the table.

x	y
-1	.4
0	1
1	2.5
2	6.25
3	15.63
4	39.06
13	Big!

73) What is the pattern of change in the y-variables?   Geometric
74) Graph the relationship.
75) What type of relationship exists between x and y?   Exponential
76) Give an equation to describe the relationship between x and y. $y = 2.5^x$
77) Give ints. x-int: none, y-int: (0, 1)
78) Complete the table.

x	y
-3	
-2	3
-1	2
0	1
1	2
6	
14	

79) What is the pattern of change in the y-variables?   Kind of Arithmetic
80) Graph the relationship.
81) What type of relationship exists between x and y?   Absolute Value
82) Give an equation to describe the relationship between x and y. $y = |x| + 1$
83) Give ints.   x-int: none, y-int: (0, 1)
84) Complete the table.

x	y
-2	4
-1	3
0	2
1	3
2	4
6	12
15	

85) What is the pattern of change in the y-variables?   Kind of Arithmetic
86) Graph the relationship.
87) What type of relationship exists between x and y?   Absolute Value
88) Give an equation to describe the relationship between x and y. $y = |x| + 2$
89) Give ints. x-int: none, y-int: (0, 2)
90) Complete the table.

x	y
-2	4
-1	2
0	0
1	2
2	4
3	6
10	

91) What is the pattern of change in the y-variables?   Kind of Arithmetic
92) Graph the relationship.
93) What type of relationship exists between x and y?   Absolute Value
94) Give an equation to describe the relationship between x and y. $y = 2|x|$
95) Give intercepts.   Both: (0,0)
96) Complete the table.

x	y
-2	
-1	-1
0	1
1	3
2	5
8	17
27	

97) What is the pattern of change in the y-variables?   Arithmetic
98) Graph the relationship.
99) What type of relationship exists between x and y? Linear
100) Give an equation to describe the relationship between x and y. $y = 2x + 1$
101) Give ints. x: (-1/2, 0),   y: (0, 1)

x	y
0	2
1	3
2	5
3	9
4	17
7	129

103) What is the pattern of change in the y-variables? Geometric
104) Graph the relationship.
105) What type of relationship exists between x and y? Exponential
106) Give an equation to describe the relationship between x and y. $y = 2^x + 1$
107) Give ints. x-int: none, y-int: (0, 2)

x	y
0	2
1	4
2	10
3	28
4	82
6	730

109) What is the pattern of change in the y-variables?   Geometric
110) Graph the relationship.
111) What type of relationship exists between x and y?   Exponential
112) Give an equation to describe the relationship between x and y. $y = 3^x + 1$
113) Give ints. x-int: none, y-int: (0, 2)
114) Complete the table.

x	y
0	0
1	1
2	4
3	9
4	16
6	36
11	

115) What is the pattern of change in the y-variables?   Squaring
116) Graph the relationship.
117) What type of relationship exists between x and y?   Quadratic
118) Give an equation to describe the relationship between x and y. $y = x^2$
119) Give ints. Both: (0,0)
120) Complete the table.

x	y
0	1
1	2
2	5
3	10
4	17
8	
13	170

121) What is the pattern of change in the y-variables?   Squaring
122) Graph the relationship.
123) What type of relationship exists between x and y?   Quadratic
124) Give an equation to describe the relationship between x and y. $y = x^2 + 1$
125) Give ints. x-int: none, y-int: (0, 1)
126) Complete the table.

x	y
0	3
1	4
2	6
3	10
4	18
14	

127) What is the pattern of change in the y-variables? Geometric
128) Graph the relationship.
129) What type of relationship exists between x and y? Exponential
130) Give an equation to describe the relationship between x and y. $y = 2^x + 2$
131) Give ints. x-int: none, y-int: (0, 3)
132) Complete the table.

x	y
-2	4
-1	1
0	0
1	1
2	4
3	9
5	

133) What is the pattern of change in the y-variables? Squaring
134) Graph the relationship.
135) What type of relationship exists between x and y? Quadratic
136) Give an equation to describe the relationship between x and y. $y = x^2$
137) Give ints. Both: (0,0)
138) Complete the table.

x	y
0	-2
1	-1
2	2
3	7
4	14
5	
10	98

139) What is the pattern of change in the y-variables?   Squaring
140) Graph the relationship.
141) What type of relationship exists between x and y? Quadratic
142) Give an equation to describe the relationship between x and y. $y = x^2 - 2$
143) Ints. x: (1.4, 0), (-1.4, 0), y: (0, 3)
144) Complete the table.

x	y
0	2
1	4
2	8
3	16
4	32
9	

145) What is the pattern of change in the y-variables? Geometric
146) Graph the relationship.
147) What type of relationship exists between x and y? Exponential
148) Give an equation to describe the relationship between x and y. $y = (2)2^x$
149) Give ints. x-int: none, y-int: (0, 2)
150) Complete the table.

x	y
-3	
-2	-7
-1	-4
0	-1
1	2
6	19
10	

151) What is the pattern of change in the y-variables? Arithmetic
152) Graph the relationship.
153) What type of relationship exists between x and y?   Linear
154) Give an equation to describe the relationship between x and y. $y = 3x - 1$
155) Give ints. x: (1/3, 0),   y: (0, -1)
156) Complete the table.

x	y
-1	
0	2
1	6
2	18
3	54
4	162
12	

157) What is the pattern of change in the y-variables?   Geometric
158) Graph the relationship.
159) What type of relationship exists between x and y? Exponential
160) Give an equation to describe the relationship between x and y. $y = (2)3^x$
161) Give ints. x-int: none, y-int: (0, 2)
162) Complete the table.

x	y
-2	-2
-1	-1
0	0
1	-1
2	-2
5	-5
11	

163) What is the pattern of change in the y-variables? Kind of Arithmetic
164) Graph the relationship.
165) What type of relationship exists between x and y? Absolute Value
166) Give an equation to describe the relationship between x and y. $y = -|x|$
167) Give ints. Both: (0,0)
168) Complete the table.

x	y
-3	
-2	-4
-1	-1
0	0
1	-1
3	-9
	-49

169) What is the pattern of change in the y-variables? Squaring
170) Graph the relationship.
171) What type of relationship exists between x and y? Quadratic
172) Give an equation to describe the relationship between x and y. $y = -x^2$
173) Give ints. Both: (0,0)
174) Complete the table.

x	y
-2	
-1	-3
0	-4
1	-3
2	0
3	5
10	

175) What is the pattern of change in the y-variables? Squaring
176) Graph the relationship.
177) What type of relationship exists between x and y? Quadratic
178) Give an equation to describe the relationship between x and y. $y = x^2 - 4$
179) Ints. x: (2, 0), (-2, 0), y: (0, -4)
180) Complete the table.