

Basic Linear Patterns #3

Write the relationship between the variables for each pattern.

1

x	y
0	6
1	9
2	12
3	15
4	18

$y = \underline{\hspace{2cm}}$

2

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

$y = \underline{\hspace{2cm}}$

3

x	y
0	5
1	9
2	13
3	17
4	21

$y = \underline{\hspace{2cm}}$

4

x	y
0	3
1	11
2	19
3	27
4	35

$y = \underline{\hspace{2cm}}$

5

x	y
1	20
2	27
3	34
4	41
5	48

$y = \underline{\hspace{2cm}}$

6

x	y
1	9
2	15
3	21
4	27
5	33

$y = \underline{\hspace{2cm}}$

7

x	y
1	10
2	19
3	28
4	37
5	46

$y = \underline{\hspace{2cm}}$

8

x	y
1	1
2	6
3	11
4	16
5	21

$y = \underline{\hspace{2cm}}$

9

x	y
1	11
2	18
3	25
4	32
5	39

$y = \underline{\hspace{2cm}}$

10

x	y
1	49
2	43
3	37
4	31
5	25

$y = \underline{\hspace{2cm}}$

11

x	y
1	13
2	10
3	7
4	4
5	1

$y = \underline{\hspace{2cm}}$

12

x	y
1	5.5
2	6
3	6.5
4	7
5	7.5

$y = \underline{\hspace{2cm}}$

13

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

$y = \underline{\hspace{2cm}}$

14

x	y
1	9
2	16
3	23
4	30
5	37

$y = \underline{\hspace{2cm}}$

15

x	y
1	3
2	8
3	13
4	18
5	23

$y = \underline{\hspace{2cm}}$

16

x	y
1	65
2	56
3	47
4	38
5	29

$y = \underline{\hspace{2cm}}$

17

x	y
20	86
21	90
22	94
23	98
24	102

$y = \underline{\hspace{2cm}}$

18

x	y
30	304
31	314
32	324
33	334
34	344

$y = \underline{\hspace{2cm}}$

19

x	y
11	103
12	113
13	123
14	133
15	143

$y = \underline{\hspace{2cm}}$

20

x	y
25	229
26	238
27	247
28	256
29	265

$y = \underline{\hspace{2cm}}$

Answers: Basic Linear Patterns #3

$y = mx + c$ where m is the gradient (increase) and c the start (zero) value

x	y
0	6
1	9
2	12
3	15
4	18

$c = +6$
increase by 3 each time
 $m = 3$

$$y = 3x + 6$$

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

$c = +1$
increase by 2 each time
 $m = 2$

$$y = 2x + 1$$

x	y
0	5
1	9
2	13
3	17
4	21

$c = +5$
increase by 4 each time
 $m = 4$

$$y = 4x + 5$$

x	y
0	3
1	11
2	19
3	27
4	35

$c = +3$
increase by 8 each time
 $m = 8$

$$y = 8x + 3$$

5

x	y
0	13
1	20
2	27
3	34
4	41

$= 20 - 7$
 $c = +13$
increase by 7 each time
 $m = 7$

$$y = 7x + 13$$

6

x	y
0	3
1	9
2	15
3	21
4	27

$= 9 - 6$
 $c = +3$
increase by 6 each time
 $m = 6$

$$y = 6x + 3$$

7

x	y
0	1
1	10
2	19
3	28
4	37

$= 10 - 9$
 $c = +1$
increase by 9 each time
 $m = 9$

$$y = 9x + 1$$

8

x	y
0	-4
1	1
2	6
3	11
4	16

$= 6 - 5$
 $c = -4$
increase by 5 each time
 $m = 5$

$$y = 5x - 4$$

9

x	y
0	4
1	11
2	18
3	25
4	32

$= 11 - 7$
 $c = +4$
increase by 7 each time
 $m = 7$

$$y = 7x + 4$$

10

x	y
0	55
1	49
2	43
3	37
4	31

$= 49 - 6$
 $c = +55$
decrease by 6 each time
 $m = -6$

$$y = -6x + 55$$

11

x	y
0	16
1	13
2	10
3	7
4	4

$= 13 - 3$
 $c = +16$
decrease by 3 each time
 $m = -3$

$$y = -3x + 16$$

12

x	y
0	5
1	5.5
2	6
3	6.5
4	7

$= 6 - 0.5$
 $c = +5$
increase by 0.5 each time
 $m = 0.5$

$$y = 0.5x + 5$$

13

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

$= -4 - 1$
 $c = -5$
increase by 1 each time
 $m = 1$

$$y = 1x - 5$$

14

x	y
0	2
1	9
2	16
3	23
4	30

$= 9 - 7$
 $c = +2$
increase by 7 each time
 $m = 7$

$$y = 7x + 2$$

15

x	y
0	-2
1	3
2	8
3	13
4	18

$= 3 - 5$
 $c = -2$
increase by 5 each time
 $m = 5$

$$y = 5x - 2$$

16

x	y
0	74
1	65
2	56
3	47
4	38

$= 56 - 9$
 $c = +74$
decrease by 9 each time
 $m = -9$

$$y = -9x + 74$$

17

x	y
0	6
20	86
21	90
22	94
23	98

$= 86 - 20 \times 4$
 $c = +6$
increase by 4 each time
 $m = 4$

$$y = 4x + 6$$

18

x	y
0	4
30	304
31	314
32	324
33	334

$= 304 - 30 \times 10$
 $c = +4$
increase by 10 each time
 $m = 10$

$$y = 10x + 4$$

19

x	y
0	-7
11	103
12	113
13	123
14	133

$= 103 - 11 \times 10$
 $c = -7$
increase by 10 each time
 $m = 10$

$$y = 10x - 7$$

20

x	y
0	4
25	229
26	238
27	247
28	256

$= 238 - 25 \times 9$
 $c = +4$
increase by 9 each time
 $m = 9$

$$y = 9x + 4$$