

Basic Linear Patterns #1

Write the relationship between the variables for each pattern.

1

x	y
0	9
1	13
2	17
3	21
4	25

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

2

x	y
0	7
1	9
2	11
3	13
4	15

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

3

x	y
0	5
1	10
2	15
3	20
4	25

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

4

x	y
0	2
1	5
2	8
3	11
4	14

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

5

x	y
1	20
2	29
3	38
4	47
5	56

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

6

x	y
1	2
2	10
3	18
4	26
5	34

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

7

x	y
1	8
2	14
3	20
4	26
5	32

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

8

x	y
1	8
2	17
3	26
4	35
5	44

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

9

x	y
1	6
2	11
3	16
4	21
5	26

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

10

x	y
1	66
2	56
3	46
4	36
5	26

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

11

x	y
1	13.5
2	14
3	14.5
4	15
5	15.5

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

12

x	y
1	18
2	28
3	38
4	48
5	58

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

13

x	y
1	1.75
2	1.5
3	1.25
4	1
5	0.75

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

14

x	y
1	10
2	14
3	18
4	22
5	26

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

15

x	y
1	10
2	13
3	16
4	19
5	22

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

16

x	y
1	42
2	38
3	34
4	30
5	26

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

17

x	y
30	91
31	94
32	97
33	100
34	103

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

18

x	y
20	45
21	47
22	49
23	51
24	53

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

19

x	y
14	47
15	51
16	55
17	59
18	63

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

20

x	y
25	180
26	187
27	194
28	201
29	208

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

Answers: Basic Linear Patterns #1

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

x	y
0	9
1	13
2	17
3	21
4	25

$c = +9$

increase by 4 each time

$m = 4$

x	y
0	7
1	9
2	11
3	13
4	15

$c = +7$

increase by 2 each time

$m = 2$

x	y
0	5
1	10
2	15
3	20
4	25

$c = +5$

increase by 5 each time

$m = 5$

x	y
0	2
1	5
2	8
3	11
4	14

$c = +2$

increase by 3 each time

$m = 3$

$y = 4x + 9$

$y = 2x + 7$

$y = 5x + 5$

$y = 3x + 2$

5

x	y
0	11
1	20
2	29
3	38
4	47

$= 20 - 9$
 $c = +11$

increase by 9 each time

$m = 9$

6

x	y
0	-6
1	2
2	10
3	18
4	26

$= 2 - 8$
 $c = -6$

increase by 8 each time

$m = 8$

7

x	y
0	2
1	8
2	14
3	20
4	26

$= 8 - 6$
 $c = +2$

increase by 6 each time

$m = 6$

8

x	y
0	-1
1	8
2	17
3	26
4	35

$= 17 - 9$
 $c = -1$

increase by 9 each time

$m = 9$

$y = 9x + 11$

$y = 8x - 6$

$y = 6x + 2$

$y = 9x - 1$

9

x	y
0	1
1	6
2	11
3	16
4	21

$= 6 - 5$
 $c = +1$

increase by 5 each time

$m = 5$

10

x	y
0	76
1	66
2	56
3	46
4	36

$= 66 - 10$
 $c = +76$

decrease by 10 each time

$m = -10$

11

x	y
0	13
1	13.5
2	14
3	14.5
4	15

$= 13.5 - 0.5$
 $c = +13$

increase by 0.5 each time

$m = 0.5$

12

x	y
0	8
1	18
2	28
3	38
4	48

$= 28 - 10$
 $c = +8$

increase by 10 each time

$m = 10$

$y = 5x + 1$

$y = -10x + 76$

$y = 0.5x + 13$

$y = 10x + 8$

13

x	y
0	2
1	1.75
2	1.5
3	1.25
4	1

$= 1.75 - 0.25$
 $c = +2$

decrease by 0.25 each time

$m = -0.25$

14

x	y
0	6
1	10
2	14
3	18
4	22

$= 10 - 4$
 $c = +6$

increase by 4 each time

$m = 4$

15

x	y
0	7
1	10
2	13
3	16
4	19

$= 10 - 3$
 $c = +7$

increase by 3 each time

$m = 3$

16

x	y
0	46
1	42
2	38
3	34
4	30

$= 38 - 4$
 $c = +46$

decrease by 4 each time

$m = -4$

$y = -0.25x + 2$

$y = 4x + 6$

$y = 3x + 7$

$y = -4x + 46$

17

x	y
0	1
30	91
31	94
32	97
33	100

$= 91 - 30 \times 3$
 $c = +1$

increase by 3 each time

$m = 3$

18

x	y
0	5
20	45
21	47
22	49
23	51

$= 45 - 20 \times 2$
 $c = +5$

increase by 2 each time

$m = 2$

19

x	y
0	-9
14	47
15	51
16	55
17	59

$= 47 - 14 \times 4$
 $c = -9$

increase by 4 each time

$m = 4$

20

x	y
0	5
25	180
26	187
27	194
28	201

$= 187 - 25 \times 7$
 $c = +5$

increase by 7 each time

$m = 7$

$y = 3x + 1$

$y = 2x + 5$

$y = 4x - 9$

$y = 7x + 5$