

**Determine the Slope of a Line**  
**Determine the Equation of a Line**

**Reporting Category: Equations and Inequalities**  
**Related SOL: A.6**

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**Background Information:**

Students will need to know how to find the equation of a line given two points on the line or the graph of the line.

Students will need to have used the graph and table functions of the graphing calculator.

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**Materials and Equipment:**

“CARDS” created by the teacher. (See below for explanation.)

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**Notes to Teacher:**

- On this card activity, the equation, graph and table are ALREADY matched. You will need to make multiple copies to use this activity fully.
- In this activity students will relate the equation of a line to the graph of the line and to a table of values.
- Each piece of information may be used in more than one way.

**Suggestions:**

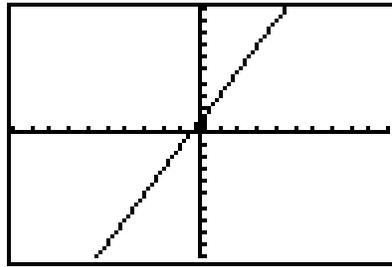
- Copy the handout, cut up the pieces, tape each on an index card, you will want to number the cards and have a “key” card so you can do a quick check of the students math.
- Each day, hand out the index cards with the tables on them and have students find equations of their own line.
- Repeat card activity at the beginning of class as a quick review daily.
- Repeat the process with the graph.
- Another activity approach is to give students a graph the first day and ask them to write an equation for the graph. Give the students the table the second day and ask them to write the domain and range and determine if there is a function. On the third day provide students with the equation and ask them to graph it. Then, give all three pieces to them for matching.

**Bonus** Repeat the process with the equation having the students sketch the graph or give you a table of values for the equation that they are holding. Relate the  $f(x)$  to the ordinate on the graph.

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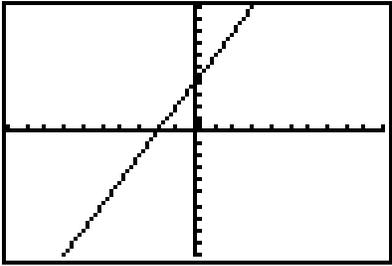
1	$2x+1$
2	
3	
4	
5	
6	
7	
8	
9	
10	



X	Y <sub>1</sub>	
1	3	
2	5	
3	7	
4	9	
5	11	
6	13	
7	15	

$x=1$

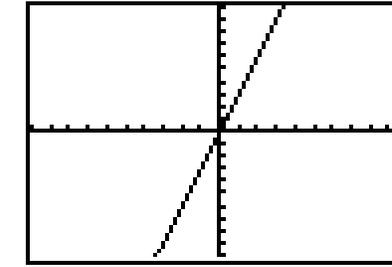
1	$2(x+2)$
2	
3	
4	
5	
6	
7	
8	
9	
10	



X	Y <sub>1</sub>	
1	6	
2	8	
3	10	
4	12	
5	14	
6	16	
7	18	

$x=1$

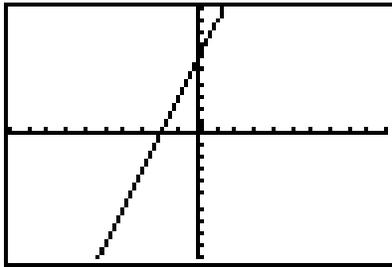
1	$3x$
2	
3	
4	
5	
6	
7	
8	
9	
10	



X	Y <sub>1</sub>	
1	3	
2	6	
3	9	
4	12	
5	15	
6	18	
7	21	

$x=1$

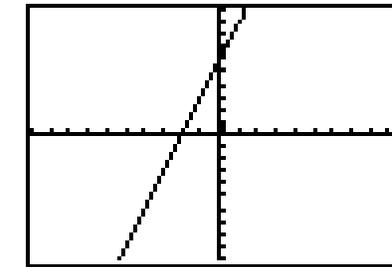
1	$3x+6$
2	
3	
4	
5	
6	
7	
8	
9	
10	



X	Y <sub>1</sub>	
1	9	
2	12	
3	15	
4	18	
5	21	
6	24	
7	27	

$x=1$

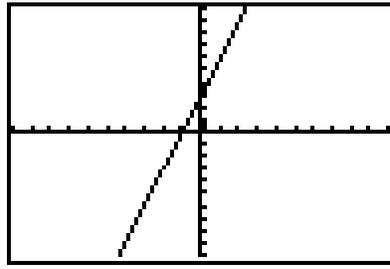
1	$3(x+2)$
2	
3	
4	
5	
6	
7	
8	
9	
10	



X	Y <sub>1</sub>	
1	9	
2	12	
3	15	
4	18	
5	21	
6	24	
7	27	

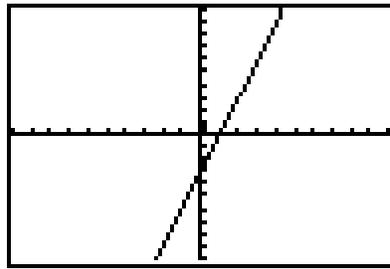
$x=1$

$$y = 3x + 3$$



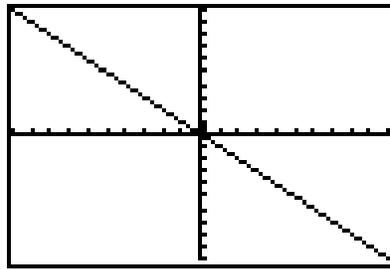
X	Y <sub>1</sub>	
0	3	
1	6	
2	9	
3	12	
4	15	
5	18	
6	21	
7	24	
8	27	
9	30	
10	33	
11	36	
12	39	
13	42	
14	45	
15	48	
16	51	
17	54	
18	57	
19	60	
20	63	
21	66	
22	69	
23	72	
24	75	
25	78	
26	81	
27	84	
28	87	
29	90	
30	93	
31	96	
32	99	
33	102	
34	105	
35	108	
36	111	
37	114	
38	117	
39	120	
40	123	
41	126	
42	129	
43	132	
44	135	
45	138	
46	141	
47	144	
48	147	
49	150	
50	153	
51	156	
52	159	
53	162	
54	165	
55	168	
56	171	
57	174	
58	177	
59	180	
60	183	
61	186	
62	189	
63	192	
64	195	
65	198	
66	201	
67	204	
68	207	
69	210	
70	213	
71	216	
72	219	
73	222	
74	225	
75	228	
76	231	
77	234	
78	237	
79	240	
80	243	
81	246	
82	249	
83	252	
84	255	
85	258	
86	261	
87	264	
88	267	
89	270	
90	273	
91	276	
92	279	
93	282	
94	285	
95	288	
96	291	
97	294	
98	297	
99	300	
X=1		

$$y = 3x - 3$$



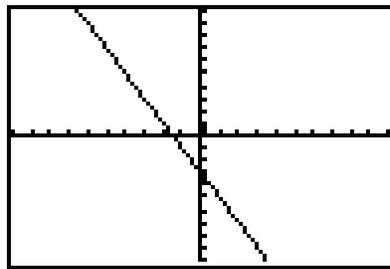
X	Y <sub>1</sub>	
0	-3	
1	0	
2	3	
3	6	
4	9	
5	12	
6	15	
7	18	
8	21	
9	24	
10	27	
11	30	
12	33	
13	36	
14	39	
15	42	
16	45	
17	48	
18	51	
19	54	
20	57	
21	60	
22	63	
23	66	
24	69	
25	72	
26	75	
27	78	
28	81	
29	84	
30	87	
31	90	
32	93	
33	96	
34	99	
35	102	
36	105	
37	108	
38	111	
39	114	
40	117	
41	120	
42	123	
43	126	
44	129	
45	132	
46	135	
47	138	
48	141	
49	144	
50	147	
51	150	
52	153	
53	156	
54	159	
55	162	
56	165	
57	168	
58	171	
59	174	
60	177	
61	180	
62	183	
63	186	
64	189	
65	192	
66	195	
67	198	
68	201	
69	204	
70	207	
71	210	
72	213	
73	216	
74	219	
75	222	
76	225	
77	228	
78	231	
79	234	
80	237	
81	240	
82	243	
83	246	
84	249	
85	252	
86	255	
87	258	
88	261	
89	264	
90	267	
91	270	
92	273	
93	276	
94	279	
95	282	
96	285	
97	288	
98	291	
99	294	
X=1		

$$y = -1x$$



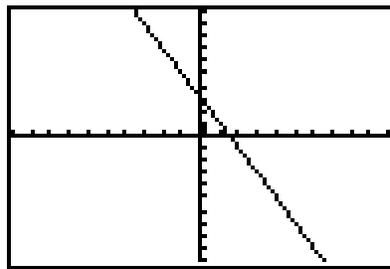
X	Y <sub>1</sub>	
0	0	
1	-1	
2	-2	
3	-3	
4	-4	
5	-5	
6	-6	
7	-7	
8	-8	
9	-9	
10	-10	
11	-11	
12	-12	
13	-13	
14	-14	
15	-15	
16	-16	
17	-17	
18	-18	
19	-19	
20	-20	
21	-21	
22	-22	
23	-23	
24	-24	
25	-25	
26	-26	
27	-27	
28	-28	
29	-29	
30	-30	
31	-31	
32	-32	
33	-33	
34	-34	
35	-35	
36	-36	
37	-37	
38	-38	
39	-39	
40	-40	
41	-41	
42	-42	
43	-43	
44	-44	
45	-45	
46	-46	
47	-47	
48	-48	
49	-49	
50	-50	
51	-51	
52	-52	
53	-53	
54	-54	
55	-55	
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57	-57	
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60	-60	
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63	-63	
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66	-66	
67	-67	
68	-68	
69	-69	
70	-70	
71	-71	
72	-72	
73	-73	
74	-74	
75	-75	
76	-76	
77	-77	
78	-78	
79	-79	
80	-80	
81	-81	
82	-82	
83	-83	
84	-84	
85	-85	
86	-86	
87	-87	
88	-88	
89	-89	
90	-90	
91	-91	
92	-92	
93	-93	
94	-94	
95	-95	
96	-96	
97	-97	
98	-98	
99	-99	
X=1		

$$y = -2x - 3$$

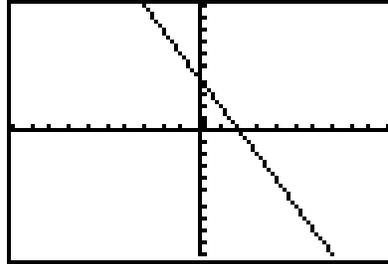


X	Y <sub>1</sub>	
0	-3	
1	-5	
2	-7	
3	-9	
4	-11	
5	-13	
6	-15	
7	-17	
8	-19	
9	-21	
10	-23	
11	-25	
12	-27	
13	-29	
14	-31	
15	-33	
16	-35	
17	-37	
18	-39	
19	-41	
20	-43	
21	-45	
22	-47	
23	-49	
24	-51	
25	-53	
26	-55	
27	-57	
28	-59	
29	-61	
30	-63	
31	-65	
32	-67	
33	-69	
34	-71	
35	-73	
36	-75	
37	-77	
38	-79	
39	-81	
40	-83	
41	-85	
42	-87	
43	-89	
44	-91	
45	-93	
46	-95	
47	-97	
48	-99	
49	-101	
50	-103	
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60	-123	
61	-125	
62	-127	
63	-129	
64	-131	
65	-133	
66	-135	
67	-137	
68	-139	
69	-141	
70	-143	
71	-145	
72	-147	
73	-149	
74	-151	
75	-153	
76	-155	
77	-157	
78	-159	
79	-161	
80	-163	
81	-165	
82	-167	
83	-169	
84	-171	
85	-173	
86	-175	
87	-177	
88	-179	
89	-181	
90	-183	
91	-185	
92	-187	
93	-189	
94	-191	
95	-193	
96	-195	
97	-197	
98	-199	
99	-201	
X=1		

$$y = -2x + 3$$



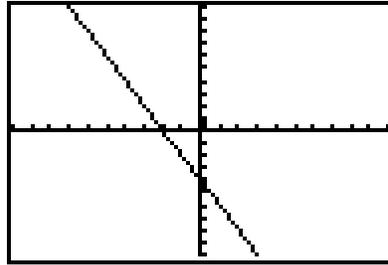
$$-2(x-2)$$



X	Y1	
2	0	
0	4	

X=1

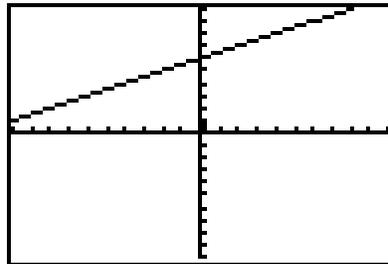
$$-2x-4$$



X	Y1	
-2	0	
0	-4	

X=1

$$(1/2)x+6$$



X	Y1	
-12	0	
0	6	

X=1