

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

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

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.

Materials and Equipment:

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

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.

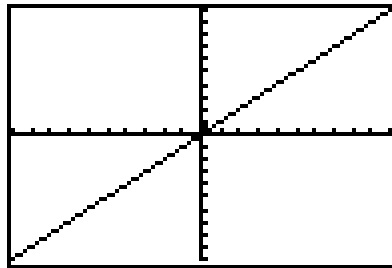
Suggestions:

- 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.

Card Activity: Match the Equation, Graph and Table

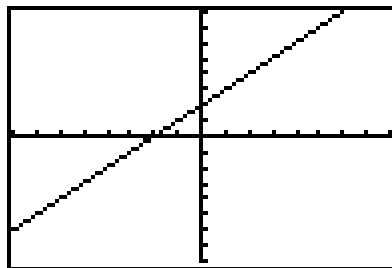
$y = 2x - 5$
 $y = 2x + 3$
 $y = x + 2$
 $y = x - 1$



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

$x = 1$

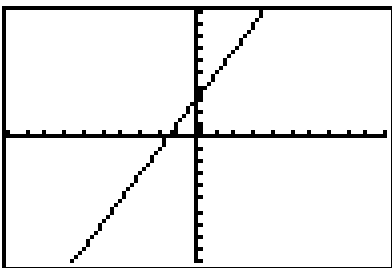
$y = 2x - 5$
 $y = 2x + 3$
 $y = x + 2$
 $y = x - 1$



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

$x = 1$

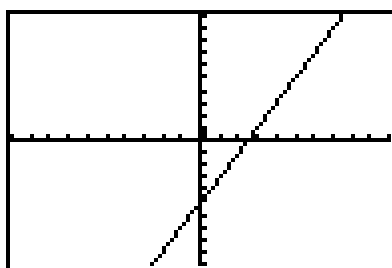
$y = 2x - 5$
 $y = 2x + 3$
 $y = x + 2$
 $y = x - 1$



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

$x = 1$

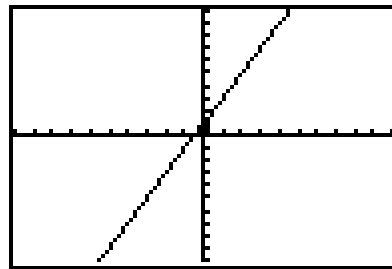
$y = 2x - 5$
 $y = 2x + 3$
 $y = x + 2$
 $y = x - 1$



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

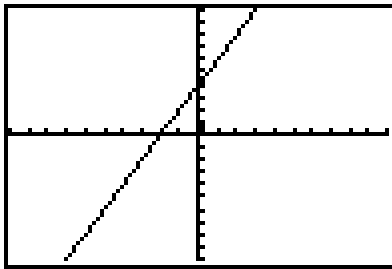
$x = 1$

X	Y ₁
1	3
2	5
3	7
4	9
5	11
6	13
7	15
8	17
9	19
10	21
11	23
12	25
13	27
14	29
15	31
16	33
17	35
18	37
19	39
20	41
21	43
22	45
23	47
24	49
25	51
26	53
27	55
28	57
29	59
30	61
31	63
32	65
33	67
34	69
35	71
36	73
37	75
38	77
39	79
40	81
41	83
42	85
43	87
44	89
45	91
46	93
47	95
48	97
49	99
50	101
51	103
52	105
53	107
54	109
55	111
56	113
57	115
58	117
59	119
60	121
61	123
62	125
63	127
64	129
65	131
66	133
67	135
68	137
69	139
70	141
71	143
72	145
73	147
74	149
75	151
76	153
77	155
78	157
79	159
80	161
81	163
82	165
83	167
84	169
85	171
86	173
87	175
88	177
89	179
90	181
91	183
92	185
93	187
94	189
95	191
96	193
97	195
98	197
99	199
100	201



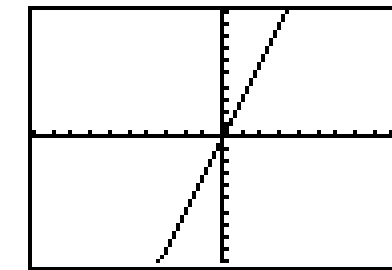
X	Y ₁
1	3
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3	7
4	9
5	11
6	13
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8	17
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11	23
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42	85
43	87
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46	93
47	95
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49	99
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56	113
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63	127
64	129
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67	135
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80	161
81	163
82	165
83	167
84	169
85	171
86	173
87	175
88	177
89	179
90	181
91	183
92	185
93	187
94	189
95	191
96	193
97	195
98	197
99	199
100	201

X	Y ₁
1	6
2	8
3	10
4	12
5	14
6	16
7	18
8	20
9	22
10	24
11	26
12	28
13	30
14	32
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19	42
20	44
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26	56
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29	62
30	64
31	66
32	68
33	70
34	72
35	74
36	76
37	78
38	80
39	82
40	84
41	86
42	88
43	90
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46	96
47	98
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65	134
66	136
67	138
68	140
69	142
70	144
71	146
72	148
73	150
74	152
75	154
76	156
77	158
78	160
79	162
80	164
81	166
82	168
83	170
84	172
85	174
86	176
87	178
88	180
89	182
90	184
91	186
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93	190
94	192
95	194
96	196
97	198
98	200
99	202
100	204



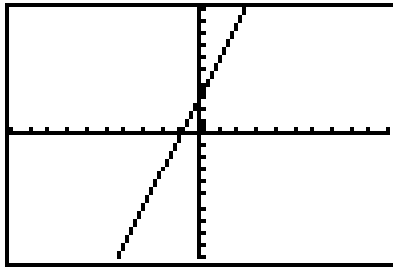
X	Y ₁
1	6
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25	54
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30	64
31	66
32	68
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46	96
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53	110
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65	134
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69	142
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71	146
72	148
73	150
74	152
75	154
76	156
77	158
78	160
79	162
80	164
81	166
82	168
83	170
84	172
85	174
86	176
87	178
88	180
89	182
90	184
91	186
92	188
93	190
94	192
95	194
96	196
97	198
98	200
99	202
100	204

X	Y ₁
1	3
2	6
3	9
4	12
5	15
6	18
7	21
8	24
9	27
10	30
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12	36
13	39
14	42
15	45
16	48
17	51
18	54
19	57
20	60
21	63
22	66
23	69
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55	165
56	168
57	171
58	174
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60	180
61	183
62	186
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64	192
65	195
66	198
67	201
68	204
69	207
70	210
71	213
72	216
73	219
74	222
75	225
76	228
77	231
78	234
79	237
80	240
81	243
82	246
83	249
84	252
85	255
86	258
87	261
88	264
89	267
90	270
91	273
92	276
93	279
94	282
95	285
96	288
97	291
98	294
99	297
100	300



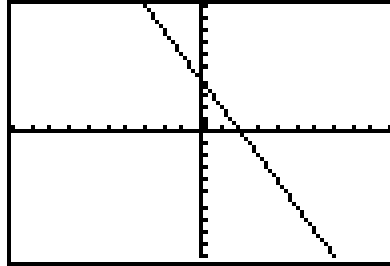
X	Y ₁
1	3
2	6
3	9
4	12
5	15
6	18
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11	33
12	36
13	39
14	42
15	45
16	48
17	51
18	54
19	57
20	60
21	63
22	66
23	69
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44	132
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46	138
47	141
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49	147
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54	162
55	165
56	168
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60	180
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64	192
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66	198
67	201
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69	207
70	210
71	213
72	216
73	219
74	222
75	225
76	228
77	231
78	234
79	237
80	240
81	243
82	246
83	249
84	252
85	255
86	258
87	261
88	264
89	267
90	270
91	273
92	276
93	279
94	282
95	285
96	288
97	

$$y = 3x + 3$$



X	Y ₁	
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	
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22	69	
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54	165	
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58	177	
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82	249	
83	252	
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86	261	
87	264	
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133	402	
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156	471	
157	474	
158	477	
159	480	
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161	486	
162	489	
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166	501	
167	504	
168	507	
169	510	
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173	522	
174	525	
175	528	
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188	567	
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190	573	
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192	579	
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198	597	
199	600	
200	603	
201	606	
202	609	
203	612	
204	615	
205	618	
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209	630	
210	633	
211	636	
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213	642	
214	645	
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222	669	
223	672	
224	675	
225	678	
226	681	
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231	696	
232	699	
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235	708	
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238	717	
239	720	
240	723	
241	726	
242	729	
243	732	
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245	738	
246	741	
247	744	
248	747	
249	750	
250	753	
251	756	
252	759	
253	762	
254	765	
255	768	
256	771	
257	774	
258	777	
259	780	
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262	789	
263	792	
264	795	
265	798	
266	801	
267	804	
268	807	
269	810	
270	813	
271	816	
272	819	
273	822	
274	825	
275	828	
276	831	
277	834	
278	837	
279	840	
280	843	
281	846	
282	849	
283	852	
284	855	
285	858	
286	861	
287	864	
288	867	
289	870	
290	873	
291	876	
292	879	
293	882	
294	885	
295	888	
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314	945	
315	948	
316	951	
317	954	
318	957	
319	960	
320	963	
321	966	
322	969	
323	972	
324	975	
325	978	
326	981	
327	984	
328	987	
329	990	
330	993	
331	996	
332	999	
333	1002	
334	1005	
335	1008	
336	1011	
337	1014	
338	1017	
339	1020	
340	1023	
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347	1044	
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362	1089	
363	1092	
364	1095	
365	1098	
366	1101	
367	1104	
368	1107	
369	1110	
370	1113	
371	1116	
372	1119	
373	1122	
374	1125	
375	1128	
376	1131	
377	1134	
378	1137	
379	1140	
380	1143	
381	1146	
382	1149	
383	1152	
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386	1161	
387	1164	
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389	1170	
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391	1176	
392	1179	
393	1182	
394	1185	
395	1188	
396	1191	
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398	1197	
399	1200	
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406	1221	
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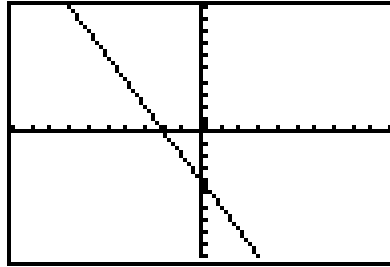
$$-2(x-2)$$



X	Y1	
2	0	
0	4	

X=1

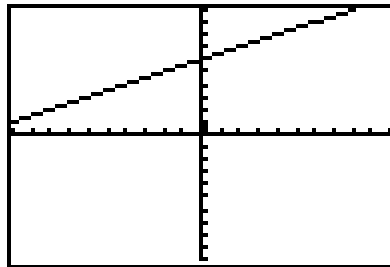
$$-2x-4$$



X	Y1	
-2	0	
0	-4	

X=1

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



X	Y1	
-12	0	
0	6	

X=1