

Goals:

I have mastered level 2 when I can:

Write an equation given the slope and y-intercept

Write an equation from a table

Write the slope-intercept form of the equation of each line given the slope and y-intercept.

1) Slope = $\frac{4}{9}$, y-intercept = -4

$$y = \frac{4}{9}x - 4$$

3) Slope = 2, y-intercept = 4

$$y = 2x + 4$$

2) Slope = $-\frac{4}{7}$, y-intercept = 5

$$y = -\frac{4}{7}x + 5$$

4) Slope = $-\frac{1}{3}$, y-intercept = -2

$$y = -\frac{1}{3}x - 2$$

Write an equation in slope-intercept form for each table below. Show how you found the slope and y-intercept.

x	y
0	0
1	2.5
2	5
3	7.5
4	10

$$y = 2.5x + 0$$

x	y
0	6
1	7
2	8
3	9
4	10

$$y = 1x + 6$$

x	y
0	1.5
1	1.5
2	4.5
3	7.5
4	10.5

$$y = 3x - 1.5$$

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

$$y = -4x + 3$$

x	y
0	1
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

$$y = 4x - 3$$

x	y
0	3
3	6
6	9
9	12
12	15
15	18
18	21
21	24
24	27
27	30
30	33
33	36
36	39
39	42
42	45
45	48
48	51
51	54
54	57
57	60
60	63
63	66
66	69
69	72
72	75
75	78
78	81
81	84
84	87
87	90
90	93
93	96
96	99
99	102
102	105
105	108
108	111
111	114
114	117
117	120
120	123
123	126
126	129
129	132
132	135
135	138
138	141
141	144
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162	165
165	168
168	171
171	174
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177	180
180	183
183	186
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189	192
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195	198
198	201
201	204
204	207
207	210
210	213
213	216
216	219
219	222
222	225
225	228
228	231
231	234
234	237
237	240
240	243
243	246
246	249
249	252
252	255
255	258
258	261
261	264
264	267
267	270
270	273
273	276
276	279
279	282
282	285
285	288
288	291
291	294
294	297
297	300
300	303
303	306
306	309
309	312
312	315
315	318
318	321
321	324
324	327
327	330
330	333
333	336
336	339
339	342
342	345
345	348
348	351
351	354
354	357
357	360
360	363
363	366
366	369
369	372
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525	528
528	531
531	534
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621	624
624	627
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633	636
636	639
639	642
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669	672
672	675
675	678
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681	684
684	687
687	690
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699	702
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705	708
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717	720
720	723
723	726
726	729
729	732
732	735
735	738
738	741
741	744
744	747
747	750
750	753
753	756
756	759
759	762
762	765
765	768
768	771
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780	783
783	786
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810	813
813	816
816	819
819	822
822	825
825	828
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831	834
834	837
837	840
840	843
843	846
846	849
849	852
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858	861
861	864
864	867
867	870
870	873
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951	954
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957	960
960	963
963	966
966	969
969	972
972	975
975	978
978	981
981	984
984	987
987	990
990	993
993	996
996	999
999	1002

$$y = 2x + 2$$

x	y
0	3
3	6
6	9
9	12
12	15
15	18
18	21
21	24
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27	30
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474	477
477	480
480	483

James and Shant share a veterinary practice. They each make farm visits two days a week. They take cellular phones on these trips to keep in touch with the office. James makes his farm visits on weekdays. His cellular phone rate is \$14.95 a month plus \$0.50 a minute. Shant makes her visits on Saturday and Sunday and is charged a weekend rate of \$34 a month.

a. Write an equation for each billing plan.

b. Is it possible for James's cellular phone bill to be more than Shant's? Explain how you know this.

Yes, if James talks for long enough.

The following tables represent the costs from two skating companies:

Wheeler's Skates and Stuffs

Number of People	Cost
0	\$100
1	\$109
2	\$106
3	\$109
4	\$112
5	\$115
6	\$118
7	\$121
8	\$124

Rollaway Skates

Number of People	Cost
0	\$50
1	\$55
2	\$10
3	\$15
4	\$20
5	\$25
6	\$30
7	\$35
8	\$40

c. Use Desmos.com to create a graph of the two equations. Create a sketch of the graph, showing where the lines cross.

Describe when Rollaway Skates is cheaper and when Wheeler's is cheaper.

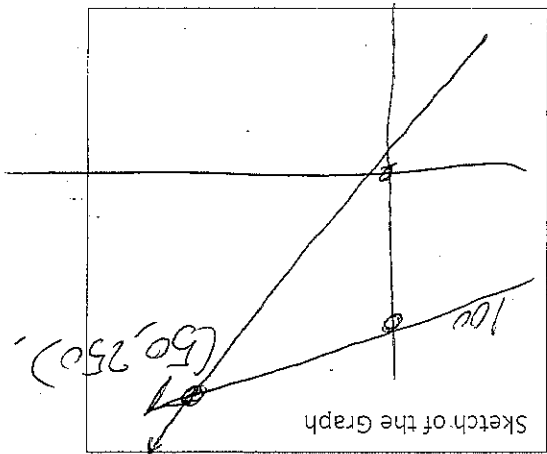
$$5x = 100 + 3x$$

$$-3x \quad -3x$$

$$\underline{2x = 100}$$

$$\underline{\quad \quad \quad}$$

$$x = 50$$



a. For each company, explain why the relationship between the number of people and cost is linear? Because each person adds a constant amount of cost.

b. For each company write an equation for the cost and number of people in slope-intercept form.

Rollaway: $y = 5x$

Wheeler's: $y = 3x + 100$

$x = \# \text{ of people}$

$y = \text{cost } (\$)$

Shant: $y = 34$

James: $y = 50x + 14.95$

$x = \# \text{ of minutes}$

$y = \text{cost of plan}$