M6L11: Analyze Patterns w/ Mixed Numbers

Fluency Practice:

5·3·19

5.634 + .1 = 5.734
5.634 − 1 = 4.634

5.634 − 0.1 = 5.534
5.634 + 0.1 = 5.734

5.937 + 0.02 = 5.957
5.937 − 0.02 = 5.917

7.056 − 0.003 = 7.053
7.056 + 0.003 = 7.059

4.304 − 0.004 = 4.300

Rule: multiply x by $\frac{1}{2}$ then add $\frac{3}{4}$

$y = \frac{1}{2}x + \frac{3}{4}$

x	y
1	$1\frac{1}{4}$
3	$2\frac{1}{4}$
4	$2\frac{3}{4}$

$y = \left(\frac{1}{2} \times 1\right) + \frac{3}{4}$

$\frac{1}{2} + \frac{3}{4}$

$y = \frac{2}{4} + \frac{3}{4}$

$y = \frac{5}{4}$

$y = 1\frac{1}{4}$

$y = \left(\frac{1}{2} \times 3\right) + \frac{3}{4}$

$\frac{3}{2} + \frac{3}{4}$

$\frac{6}{4} + \frac{3}{4}$

$\frac{9}{4}$

$y = 2\frac{1}{4}$

$(4, 3\frac{1}{2})$

Line ℓ

Rule: *Triple x*

$y = 3x$

x	y	(x, y)
0	0	(0,0)
1	3	(1, 3)
2	6	(2,6)
4	12	(4,12)

Line m

Rule: *Triple x, and then add 3*

$y = 3x + 3$

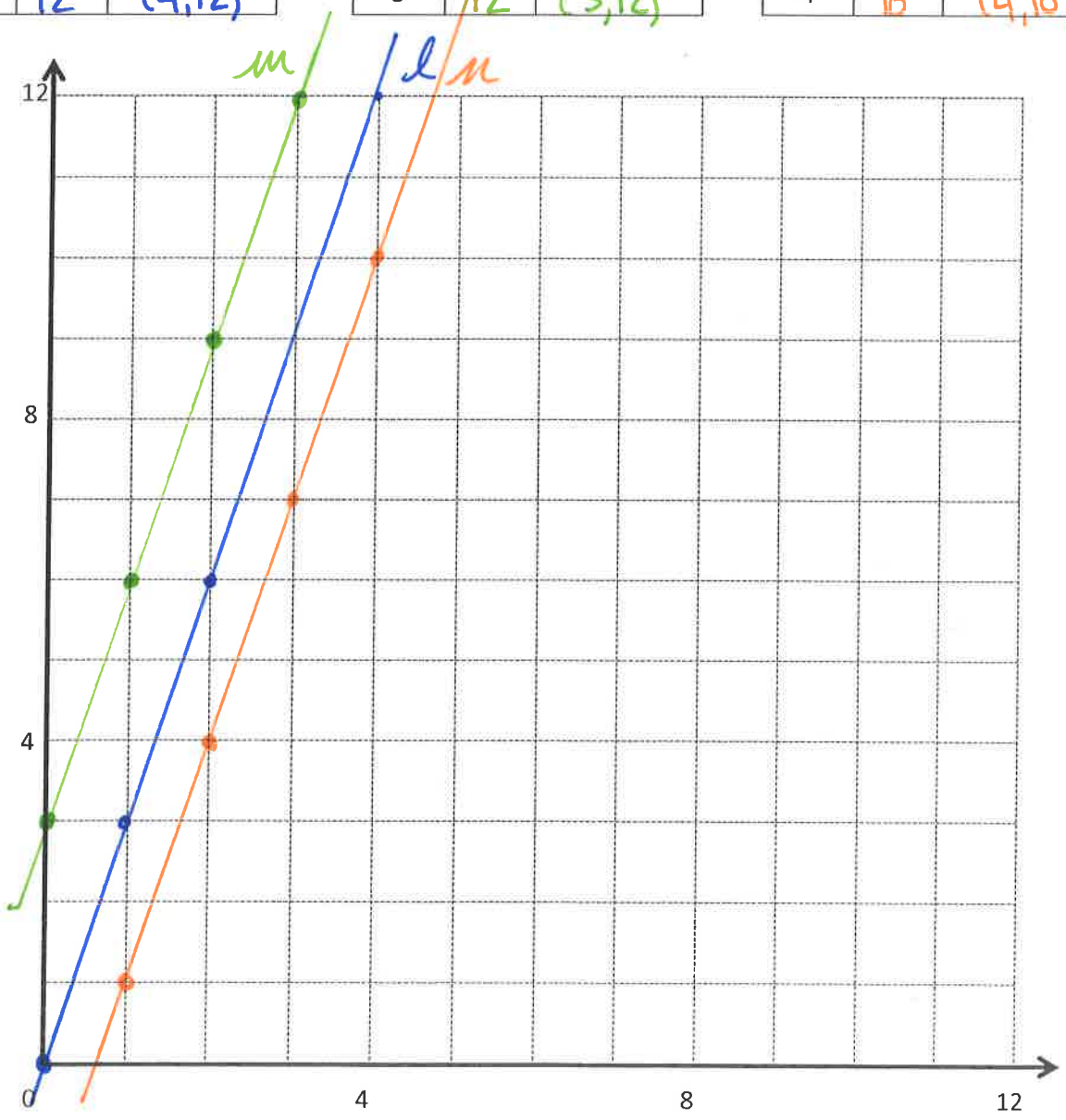
x	y	(x, y)
0	3	(0,3)
1	6	(1,6)
2	9	(2,9)
3	12	(3,12)

Line n

Rule: *Triple x, and then subtract 2*

$y = 3x - 2$

x	y	(x, y)
1	1	(1,1)
2	4	(2,4)
3	7	(3,7)
4	10	(4,10)



coordinate plane

Name _____ Date _____

1. Complete the tables for the given rules.

Line ℓ

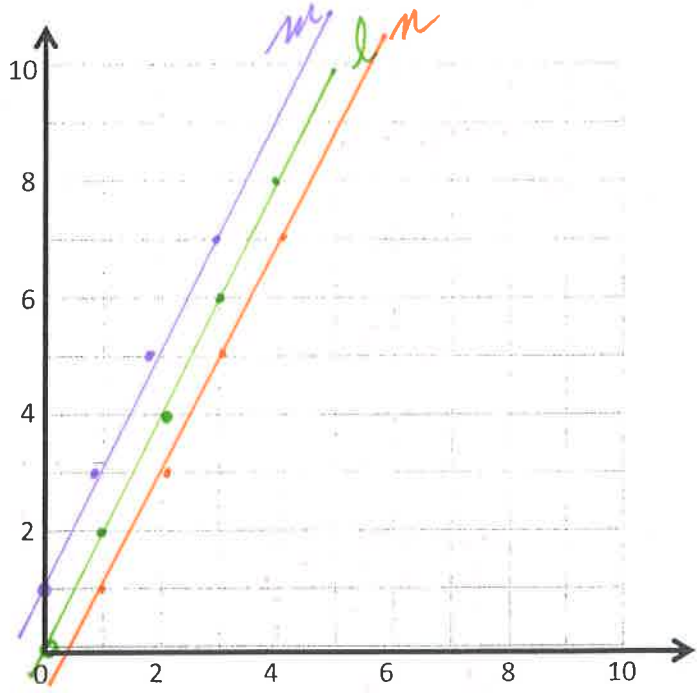
Rule: *Double x* $2x = y$

x	y	(x, y)
0	0	(0,0)
1	2	(1,2)
2	4	(2,4)
3	6	(3,6)

Line m

Rule: *Double x, and then add 1* $2x + 1 = y$

x	y	(x, y)
0	1	(0,1)
1	3	(1,3)
2	5	(2,5)
3	7	(3,7)



a. Draw each line on the coordinate plane above.

b. Compare and contrast these lines.

Parallel
- y-coordinate on m line is 1 more than y-coordinate on l

c. Based on the patterns you see, predict what the line for the rule *double x, and then subtract 1* would look like. Draw the line on the plane above.

2. Circle the point(s) that the line for the rule *multiply x by* $\frac{1}{3}$, *and then add 1* would contain.

$(0, \frac{1}{3})$ $(2, 1\frac{2}{3})$ $(1\frac{1}{2}, 1\frac{1}{2})$ $(2\frac{1}{4}, 2\frac{1}{4})$

a. Explain how you know.

$y = \frac{1}{3}x + 1$

b. Give two other points that fall on this line.