Name_____ Date_____

Patterns and Relations
Unit 1 Line Master 3e

Answers

1. a) Each expression represents a linear pattern.
For each pattern, complete the table of values.

A: $2x + 2$

x	$2x + 2$
0	2
1	4
2	6
3	8

B: $3x + 2$

x	$3x + 2$
0	2
1	5
2	8
3	11

C: $4x + 2$

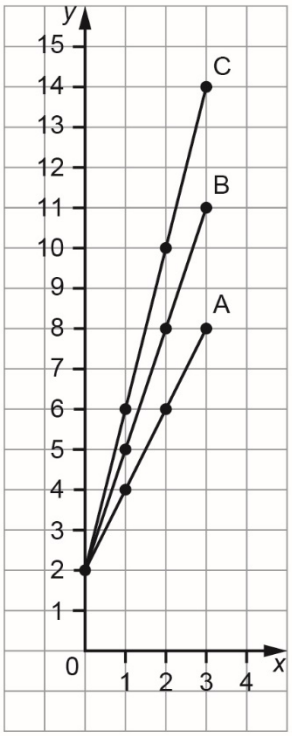
x	$4x + 2$
0	2
1	6
2	10
3	14

Name_____ Date_____

Patterns and Relations
Unit 1 Line Master 3f

Answers (cont'd)

b) Graph each pattern on the grid provided. Join each set of points with a line.



c) How do the expressions compare? How do the lines on the graph compare?

The expressions all contain + 2, but the number in front of *x* differs.

Each graph starts at the point (0, 2) and the points move up as you move right.

The + 2 tells you the initial value.

The steepness of each line is different.

Pattern C has the steepest line.

For A: every time *x* increases by 1, *y* increases by 2.

For B: every time *x* increases by 1, *y* increases by 3.

For C: every time *x* increases by 1, *y* increases by 4.

The number in front of *x* tells you the constant change.

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Patterns and Relations
Unit 1 Line Master 3g

Answers (cont'd)

2. a) Each expression represents a linear pattern.
For each pattern, complete the table of values.

A: $3x + 1$

x	$3x + 1$
0	1
1	4
2	7
3	10

B: $3x + 3$

x	$3x + 3$
0	3
1	6
2	9
3	12

C: $3x + 5$

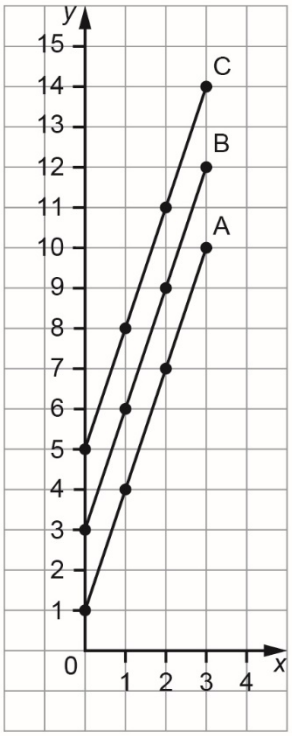
x	$3x + 5$
0	5
1	8
2	11
3	14

Name_____ Date_____

Patterns and Relations
Unit 1 Line Master 3h

Answers (cont'd)

b) Graph each pattern on the grid provided. Join each set of points with a line.



c) How do the expressions compare?

How do the lines on the graph compare?

The expressions have the same number in front of *x*, 3, but the number added is different each time.

Each line starts at a different point on the vertical axis.
The number added tells you the initial value.
The points on each graph move up as you move right.
Every time *x* increases by 1, *y* increases by 3.
The lines all have the same steepness.
They are parallel.
The number in front of *x* tells you the constant change.