Answers

Answers

**Patterns and Relations**

**Unit 1 Line Master 3e**

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

A: 2*x* + 2 B: 3*x* + 2

|  |  |
| --- | --- |
| ***x*** | **2*x* + 2** |
| 0 | 2 |
| 1 | 4 |
| 2 | 6 |
| 3 | 8 |

|  |  |
| --- | --- |
| ***x*** | **3*x* + 2** |
| 0 | 2 |
| 1 | 5 |
| 2 | 8 |
| 3 | 11 |

C: 4*x* + 2

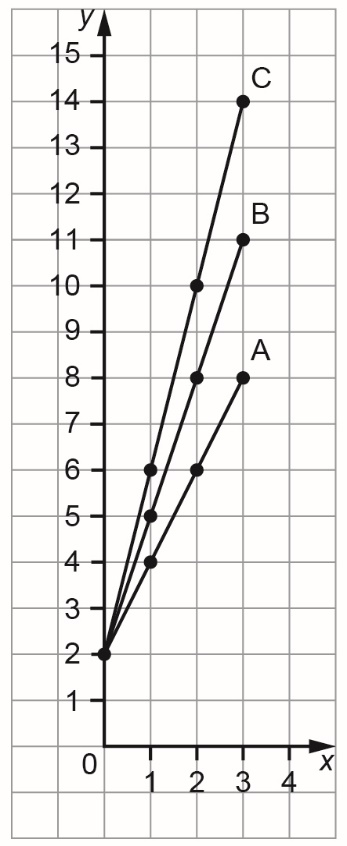
|  |  |
| --- | --- |
| ***x*** | **4*x* + 2** |
| 0 | 2 |
| 1 | 6 |
| 2 | 10 |
| 3 | 14 |

Answers (cont’d)

Answers

**Patterns and Relations**

**Unit 1 Line Master 3f**

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.

Answers (cont’d)

Answers

**Patterns and Relations**

**Unit 1 Line Master 3g**

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

A: 3*x* + 1 B: 3*x* + 3

|  |  |
| --- | --- |
| ***x*** | **3*x* + 1** |
| 0 | 1 |
| 1 | 4 |
| 2 | 7 |
| 3 | 10 |

|  |  |
| --- | --- |
| ***x*** | **3*x* + 3** |
| 0 | 3 |
| 1 | 6 |
| 2 | 9 |
| 3 | 12 |

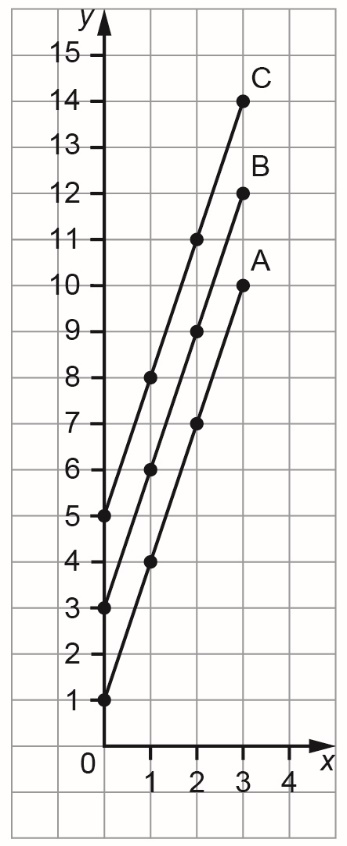
C: 3*x* + 5

|  |  |
| --- | --- |
| ***x*** | **3*x* + 5** |
| 0 | 5 |
| 1 | 8 |
| 2 | 11 |
| 3 | 14 |

Answers (cont’d)

Answers

**Patterns and Relations  
Unit 1 Line Master 3h**

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.