ML8 Chapter 9 Problems of the Week Answers

BLM 9−4 Chapter 9 Problems of the Week
1. $y = 3x + 1$
2. Answers will vary.
3. Answers will vary but should include drawing a coordinate grid, making a table of values, and plotting the points.
4. $5 = 4(3) + b$
         $5 = 12 + b$
$5 − 12 = 12 − 12 + b$
       $−7 = b$
5.

x	$y = x - 4$
−2	−6
−1	−5
0	−4
1	−3
2	−2
3	−1
4	0
5	1

x	$y = 3x - 6$
−2	−12
−1	−9
0	−6
1	−3
2	0
3	3
4	6
5	9

a) Yes. In $y = x − 4$, y is obtained by subtracting 4 from x, so the numbers continue to get smaller. In $y = 3x − 6$, y is obtained by multiplying x by 3 and then subtracting 6, so if x is a negative value, it decreases in value when multiplied by 3 and then decreases even further when 6 is subtracted from it.
b) Yes. In $y = x − 4$, each increasing value of y is obtained by subtracting 4 from a larger number, resulting in a larger difference. In $y = 3x − 6$, each value of y is obtained by multiplying 3 by a larger number, resulting in a larger product.
c) When $x = 1$, the value of y in both equations is −3.
d) Answers may vary. Example: The equations both have a point at $(1, −3)$ because, for both equations, the value of y is equal to − 3 when $x = 1$.

6. a) Answers may vary.
b) Common points are shared by none of the fractions.
c) For $\frac{1}{2}$, an algebraic expression is

$2x = y$; for $\frac{1}{3}$, it is $3x = y$; for $\frac{1}{4}$,

it is $4x = y$; and for $\frac{1}{5}$, it is $5x = y$.

d) If you can find the numerator and denominator of a fraction along a line of points on the graph, the fraction has an equivalent fraction in lowest terms along that line. For example, you can find

the point $(4, 16)$ along the set of points for $\frac{1}{4}$, so

$\frac{4}{16}$ can be expressed in lowest terms as $\frac{1}{4}$.