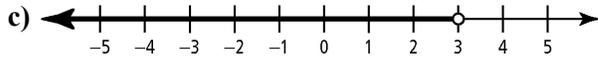
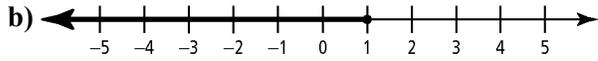
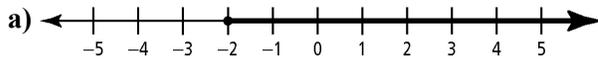


# Chapter 9 Warm-Up

## Section 9.1 Warm-Up

1. Express each number line in the form of an inequality.



2. Draw a number line showing the solution to each linear inequality.

a)  $x > 4$       b)  $x \leq -1$

3. Solve each equation.

a)  $6m + 3 = 2m + 15$

b)  $11x - 1 = 2x - 28$

c)  $2 - 5w = 16 - 3w$

d)  $6y - 3 = 5(2y - 3)$

4. For what value(s) of  $b$  is each expression

i) equal to 50?

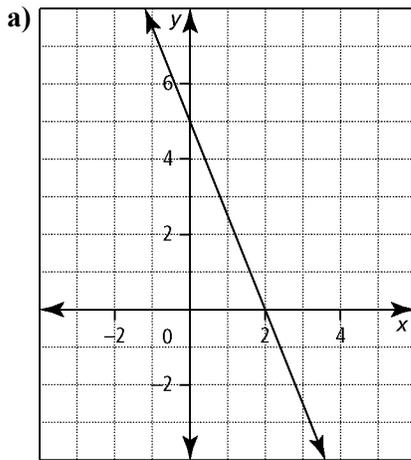
ii) less than 50?

iii) greater than 50?

a)  $5(b - 10)$       b)  $3b + 5$

c)  $\frac{25b}{3}$       d)  $-1.25b$

5. What is the value of the  $x$ -intercept and the  $y$ -intercept for each linear relation?



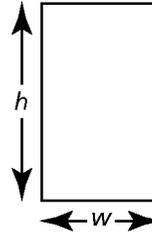
b)  $y = 2x - 3$

c)  $2x + 3y = 9$

6. Photographs can be classified into three shapes: portrait, square, and landscape. Let  $h$  represent the height of a photo and  $w$  represent the width.

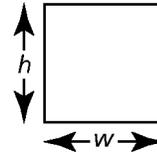
**Portrait**

$h$  is greater than  $w$ .



**Square**

$h$  is equal to  $w$ .



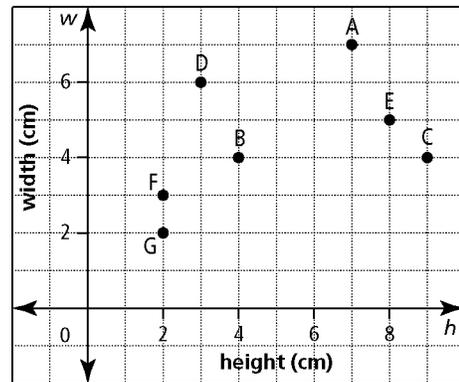
**Landscape**

$h$  is less than  $w$ .



- a) Express each photo classification as either an equation or an inequality.

- b) Each point marked on the graph shown represents a photo. For each photo, A to G, identify whether its shape is portrait, square, or landscape.



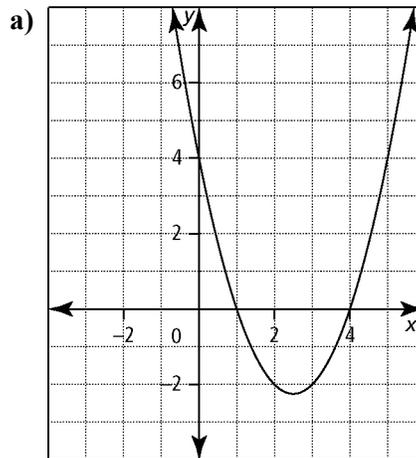
- c) Draw a line on the graph through the points that represent square photos. State how the points that represent portrait and landscape photos relate to this line.



**Section 9.2 Warm-Up**

- Explain how a straight line on a graph divides the Cartesian plane into three regions. Use an example.
- Draw a graph of your choice to show the solution set of each inequality.
  - $3(x - 5) + 2 \leq 2x - 9$
  - $y < 3x - 5$
  - $2x - 3y \leq 6$
- Determine if the given value of  $x$  is a solution for the inequality.
  - $x \geq \frac{5}{2}$ ,  $x = 2$
  - $3x - 1 < x - 4$ ,  $x = -2$
  - $4(x - 3) > -2(8 - 5x)$ ,  $x = -12$
- Complete each ordered pair to satisfy the equation  $y = x^2 + 1$ .
  - $(-4, \square)$
  - $(2.7, \square)$
  - $(\square, 5)$
  - $(\square, 2.44)$
  - $(\square, \square)$

- Factor each quadratic expression.
  - $x^2 - 7x - 30$
  - $x^2 + 9x + 18$
  - $2x^2 - x - 6$
  - $3x^2 + 14x - 5$
- Determine the  $x$ -intercepts of each quadratic function.



- $f(x) = (x - 5)(x + 2)$
- $f(x) = x^2 - x - 56$
- $f(x) = 2x^2 + x - 1$

**Section 9.3 Warm-Up**

- Solve each quadratic equation by factoring.
  - $x^2 - 9 = 0$
  - $x^2 - 6x - 7 = 0$
  - $2x^2 + 13x + 15 = 0$
  - $3x^2 - 5x = -2$
- Use the quadratic formula to determine the roots of  $y = 2x^2 + 3x - 1$ .
- Draw the graph of each quadratic equation. From the graph, determine how many zeros the function has.
  - $y = (x + 1)^2 - 3$
  - $y = (x - 2)^2$
  - $y = x^2 - 4x + 5$
- Explain the relationship between the roots of a quadratic equation, the zeros of a quadratic function, and the  $x$ -intercepts for the graph of the function. Use examples to support your explanation.
- Solve each quadratic inequality.
  - $x^2 - 1 \leq 0$
  - $x^2 - 1 > 0$
  - $x^2 - 3x \leq 4$
- Draw a number line that shows the solution for each quadratic inequality.
  - $x^2 + x - 6 > 0$
  - $3x^2 + 11x - 4 \leq 0$

