

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Learning Goal 9.1**

Solving linear inequalities.

Whether solving an equation or an inequality, the steps are the same

Presentation of the solution will be different.

**Example** Solve the following.

**Equations**

$$h + 3 = 5$$

$$6.2 = x - 4.5$$

$$2a - 5 = 2 + 3a$$

**Inequalities**

$$h + 3 < 5$$

$$6.2 \leq x - 4.5$$

$$2a - 5 \geq 2 + 3a$$

Things get a little tricky when we move into multiplication and division.

$12 > 6$		$12 > 6$	
$12 \times (-3)$	$6 \times (-3)$	$12 \div (-3)$	$6 \div (-3)$
$12 \times (-2)$	$6 \times (-2)$	$12 \div (-2)$	$6 \div (-2)$
$12 \times (-1)$	$6 \times (-1)$	$12 \div (-1)$	$6 \div (-1)$
$12 \times (1)$	$6 \times (1)$	$12 \div (1)$	$6 \div (1)$
$12 \times (2)$	$6 \times (2)$	$12 \div (2)$	$6 \div (2)$
$12 \times (3)$	$6 \times (3)$	$12 \div (3)$	$6 \div (3)$

**Example** Solve each inequality. Graph the solution, and use a test point to verify your answer.

a.  $3a + 2 \geq 8$

b.  $\frac{b}{2} - 6 < 1$

c.  $5(q - 7) < -15$

d.  $\frac{6}{-g} \geq -2, \quad g \neq 0$

e.

$$\frac{5p}{12} - \frac{5}{4} < \frac{p}{3}$$