Lesson 3.5

Multiplication and Division

Properties of Inequality

Goal: to use inverse operations of
multiplication and division to solve inequalities

Start with any inequality that is
true. $4 > 2$
1. multiply both sides by a
positive number. $4(3) \quad 2(3)$

$$12 > 6$$

2. multiply both sides by a
negative number. $4(-2) \quad 2(-2)$

$$-8 < -4$$

What can you conclude?

mult. by a pos. doesn't
                change sign
mult by a neg dd change
                sign

If we start with a > b, complete the
following by filling in with < or >

$$\frac{a}{2} > \frac{b}{2}$$

$$-3a < -3b$$

Multiplication/Division Property
of Inequality
                                   → positive
if a < b and c is > 0, then ac < bc
                                   negative
if a < b and c is < 0, then ac > bc

How can we put this into simpler
terms?

Solve:

$2x > -8$

$\frac{2}{2} \quad \frac{2}{2}$

$x > -4$

$14 < -7s$

$-2 > s$

$14 < -7(-3)$

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$3x + 10 - 5x < 4$

$-10 \qquad -10$

$\frac{-2x}{-6} < \frac{-6}{-6}$

$x > 3$

On average, a customer service rep helps at most 160 customers during an 8-hour workday. Write and solve and inequality to find the average number of customers *c* she can help each hour during one of her workdays.

$\frac{8c}{8} \leq \frac{160}{8} \qquad c \leq 20$

Hwk: pg 148 - 150

11, 12 - 28 (4th), 29,

30 - 48 even, 49, 54,

59 - 61 all