

3.3 Solving Multiplication Inequalities

Multiplying or dividing each side of an inequality by a negative number changes the meaning of the inequality.

$$3 > 1$$

$$(-2)(3) \square (-2)(1)$$

$$-6 \triangleleft -2$$

Rule: Flip the inequality symbol when you multiply or divide by a negative number.

Sep 19-7:05 AM

Solve and graph.

1. $\frac{2x}{2} > \frac{8}{2}$
 $x > 4$

2. $\frac{-4x}{-4} > \frac{16}{-4}$
 $x < -4$

Oct 17-11:43 AM

Solve and graph.

3. $\frac{a}{3} \leq 12 \cdot 3$
 $a \leq 36$

4. $\frac{-n}{5} \geq (2) \cdot 5$
 $n \leq -10$

Oct 17-11:43 AM

Solve and graph.

5. $\frac{-30}{5} > \frac{5c}{5}$
 $-6 > c$
 $c < -6$

6. $\frac{63}{-9} \geq \frac{-9y}{-9}$
 $-7 \leq y$
 $y \geq -7$

Oct 17-11:43 AM

Solve and graph.

7. $4 > \frac{p}{8} \cdot 8$
 $32 > p$
 $p < 32$

8. $-3(-3) \leq \frac{-x}{3} \cdot 3$
 $9 \geq x$
 $x \leq 9$

Oct 17-11:43 AM

Solve and graph.

9. $\frac{3 \cdot 7x}{7 \cdot 3} \geq \frac{-7 \cdot 3}{7}$
 $x \geq -3$

10. $\frac{-4 \cdot -3w}{8 \cdot 4} < \frac{1 \cdot -4}{3 \cdot 3}$
 $w > \frac{-4}{9}$

Sep 17-3:44 PM

Solve and graph.

11. $\frac{11}{3} < 3m$
 $\frac{11}{3} < 3m$
 $m > \frac{11}{9}$

12. $-3 < 3x$
 $-2 < x$
 $x > -2$

Sep 17-3:44 PM

If you have \$45 in your wallet, how many \$6 DVD's can you buy?

$6d \leq 45$
 $d \leq 7.5$ 7 DVD's

If you charge \$12 per hour, how many hours must you babysit to earn at least \$90?

$12h \geq 90$
 $h \geq 7.5$ 8 hours

Sep 19-7:21 AM

Classwork: p.181 #8 - 32 even

Question and work

Final Five

The mayor of Renee's town chose 160 students from her school to attend a city debate. This amount is no more than 1/4 of the students in Renee's school. What is the least possible number of students that attend Renee's school?

a) 40 b) 160 c) 320 d) 640

$\frac{1}{4}S < 160$

Sep 17-3:52 PM