

8:06 | Solving Inequations

Name: _____

Class: _____

Examples



The rules for inequations are the same as for equations, except you must reverse the inequality sign if you multiply or divide by a negative. Note: $5 < 7$ but $-5 > -7$.

1 Solve.

a $a + 7 < 15$
 $(-7) \quad (-7)$
 $\therefore a < 8$

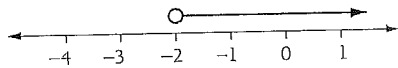
b $\frac{b}{6} \geq -2$
 $(\times 6) \quad (\times 6)$
 $\therefore b \geq -12$

c $5c - 7 < 23$
 $(+7) \quad (+7)$
 $5c < 30$
 $(\div 5) \quad (\div 5)$
 $\therefore c < 6$

d $8 - 3d \leq 50$
 $(-8) \quad (-8)$
 $-3d \leq 42$
 $(\div -3) \quad (\div -3)$
 $\therefore d \geq -14$

2 Show on a number line.

a $x > -2$
 (Show the numbers more than -2 .)



(Empty circle as $x \neq -2$.)

b $y \leq 3$
 (Show the numbers less than or equal to 3.)



(Filled circle as y could be 3.)

Exercise

1 Show on a number line.

a $x > 3$

b $x \leq 2$

c $x < -1$

d $x \geq -4$

e $m \geq 0$

f $m < 5$

g $m \leq -3$

h $m > 1$

i $y \geq 4$

j $y > -1$

k $y < 0$

l $y \leq 6$

2 Solve.

a $x + 3 > 5$

b $m - 2 \leq 6$

c $n + 7 < 4$

d $y - 4 \leq 1$

e $a + 5 > 2$

f $3a < 12$

g $6t > -12$

h $2c \leq -10$

i $-3f \leq 3$

j $\frac{q+6}{3} < -1$

k $\frac{x}{7} \geq 7$

l $\frac{c-12}{3} > 2$

m $2y + 5 \geq 17$

n $3k - 7 > 20$

o $5x + 3 \leq -17$

p $-4y + 5 > -15$

q $7 - 14f < 35$

r $t \div 4 > -4$

s $2(3 - a) \leq 14$

t $4(3x + 7) \geq -8$

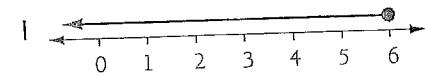
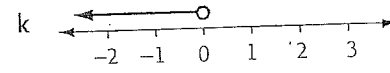
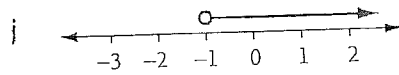
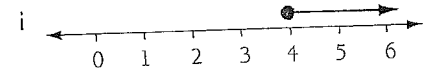
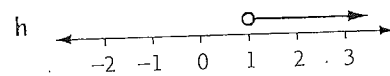
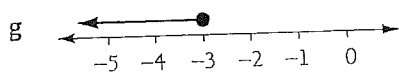
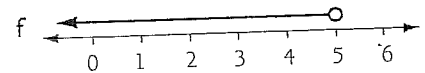
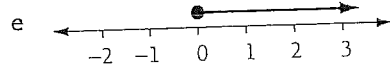
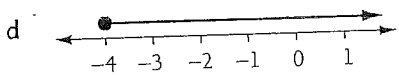
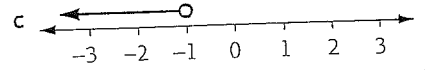
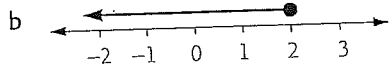
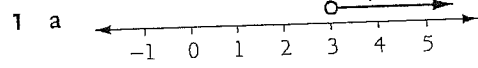
u $5x - 7 \leq 38$

v $18 \geq -4x$

w $8 - 3w < -4$

x $3(2p - 9) < 18$

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2 a $x > 2$

b $m \leq 8$

c $n < -3$

d $y \leq 5$

e $a > -3$

f $a < 4$

g $t > -2$

h $c \leq -5$

i $f \geq -1$

j $q < -9$

k $x \geq 49$

l $c > 18$

m $y \geq 6$

n $k > 9$

o $x \leq -4$

p $y < 5$

q $f > -2$

r $t > -16$

s $a \geq -4$

t $x \geq -3$

u $x \leq 9$

v $x \geq -4.5$

w $w > 4$

x $p < 7.5$