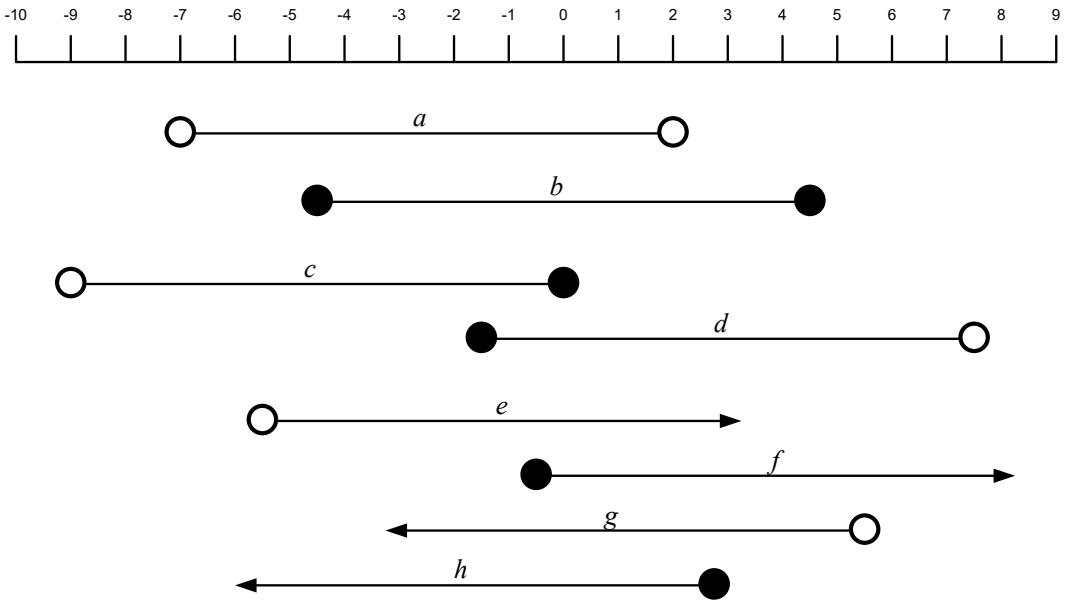
Inequalities

1 Write the inequalities represented by each of the variables below.



2 Draw the inequalities stated on the scales below.

a $a \geq -4$

b $b \leq \frac{1}{2}$

c $-3\frac{1}{2} \leq c < 7\frac{1}{2}$

d $3d \geq -15$

e $4e \leq 12$

f $-3\frac{1}{2} \leq 3f < 7\frac{1}{2}$

g $7g > -3\frac{1}{2}$

f $-10 < 5f < 7\frac{1}{2}$

3 Solve the following inequalities to find the value of x specified.

a Lowest value of x

$$3x + 7 > 12$$

b Highest value of x

$$7x - 23 \leq 5$$

c Highest value of x

$$6x - 2 \leq 4x + 30$$

d Lowest value of x

$$\frac{2}{3}(6x - 9) < 5x + 2$$

e Interval of x

$$-4 \leq x + 6 < 11$$

f Interval of x

$$-8 < 2x + 7 < 34$$

g Lowest value of x

$$5x + 12 > 12$$

h Highest value of x

$$4x + 8\frac{1}{2} \leq 25$$

i Highest value of x

$$3x + 5 \leq 7x - 21$$

j Lowest value of x

$$\frac{3}{4}(12x - 24) < 11x + 19$$

k Interval of x

$$-6 \leq 5x - 11 < 44$$

l Interval of x

$$-5 < \frac{3}{4}x - 4 < 16$$

m Interval of x

$$12 < \frac{3}{8}x - 4 < 24$$

n Lowest value of x

$$5x + 12 > 121$$

o Highest value of x

$$x + 9\frac{3}{4} \leq 25$$

p Highest value of x

$$6x + 5 \leq 9x - 15$$

q Lowest value of x

$$2(12x - 24) < 15x + 37$$

r Interval of x

$$7 \leq 3x + 12 < 58$$

s Interval of x

$$-12 < \frac{3}{8}x + 12 < 16$$

t Interval of x

$$16 < \frac{7}{8}x - 16 < 24$$

4 Multiplying Inequalities by a Negative Number

a $-3x \leq 24$

b $-8x \leq 48$

c $-4x > 32$

d $-6x \leq 18$

e $-5x \geq 24$

f $-9x \leq 24$

g $12 - 6x \leq 24$

h $25 - 3x > 4$

i $-3x + 18 \leq 24$

j $-7x \leq 21 + x$

k $-3x > 8 + x$

l $-6x \geq x + 2$

m $-8x - 15 \leq 24 + x$

n $-(2x + 9) \leq 25$

o $-5x + 14 \geq 29$

Answers to Question 2: Draw the inequalities onto the number lines below and stick this sheet into your book