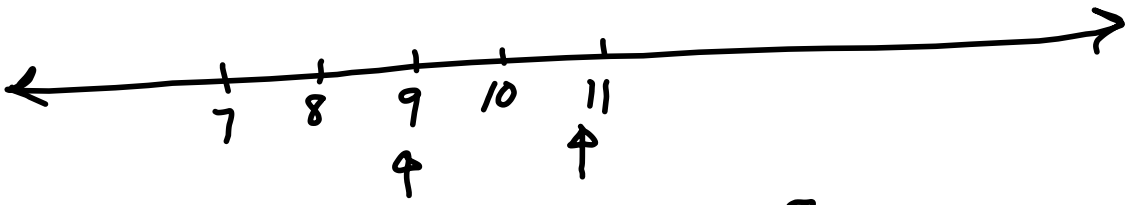
2.7 (11) The sum of three consecutive odd integers is 57. Find the integers

let x = the first odd integer
$x+2$ = The 2nd odd integer
$x+4$ = The 3rd odd integer



$$x + x+2 + x+4 = 57$$

$$3x + 6 = 57$$

$$-6 \qquad -6$$

$$\frac{3x}{3} = \frac{51}{3}$$

$$x = 17$$

$$x+2 = 19$$

$$x+4 = 21$$

The three odd integers are 17, 19, and 21.

(15) 8% x

9% $2000 more

total interest = $860

(1) let x = The amount invested at 8%

x + 2000 = the amt invested at 9%

	amt	rate	total interest
@8%	x	.08	.08x
@9%	x+2000	.09	.09(x+2000)
total			860

(2) $[.08x + .09(x+2000) = 860]100$

$8x + 9(x+2000) = 86000$

$8x + 9x + 18000 = 86000$

$17x + 18000 = 86000$

$-18000 \quad -18000$

$\frac{17x}{17} = \frac{68000}{17}$

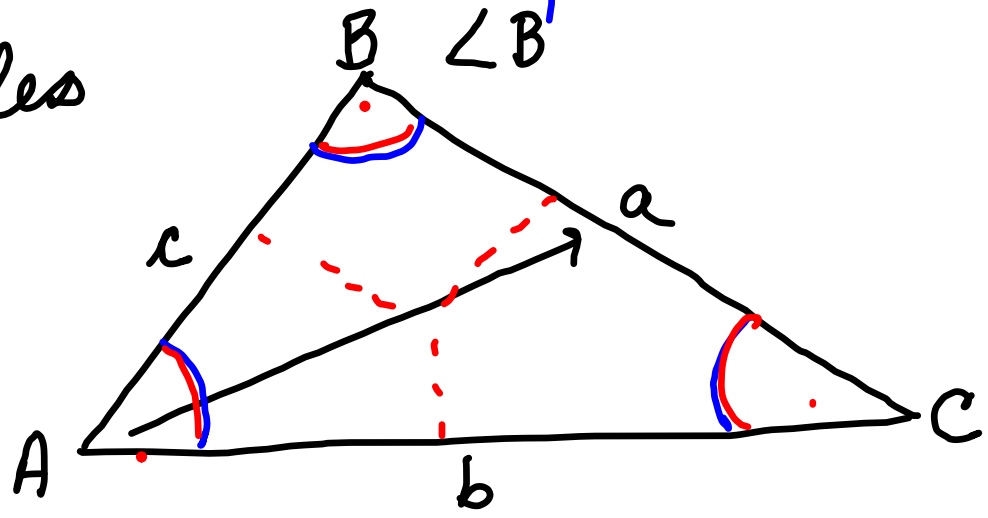
(3) $x = 4000$

$x + 2000 = 6000$

(4) I would have invested $4000 at 8% interest and $6000 at 9% interest.

Facts from Geometry

Triangles



∠A

∠C

The sum of the interior angles of a triangle is 180

#22
Pg 134

One angle in a triangle measures twice the smallest angle, while the largest angle is six times the smallest. Find the measure of all three angles.

let x = The measure of the smallest angle

$2x$ = The measure of the next angle

$6x$ = The measure of the largest angle

$$x + 2x + 6x = 180$$

$$\frac{9x}{9} = \frac{180}{9}$$

$$x = 20$$

$$2x = 40$$

$$6x = 120$$

The three angles measure 20°, 40°, and 120°.

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let x = the measure of the smallest angle

$x+50$ = The measure of 2nd angle

$3x$ = the measure of the 3rd angle

$$x + x + 50 + 3x = 180$$

$$5x + 50 = 180$$

$$-50 \quad -50$$

$$\frac{5x}{5} = \frac{130}{5}$$

$$x = 26$$

$$x+50 = 76$$

$$3x = 78$$

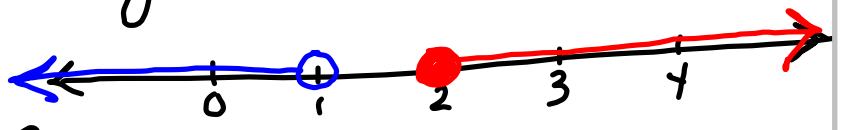
$$180$$

The three angles measure 26°, 76°, and 78°.

2.8

Linear Inequalities

* $x < 1$
* $x \geq 2$



The addition property of inequalities

For any algebraic expressions A, B and C

if $A < B$

$A + C < B + C$ { [

ex $a - 4 \leq 8$

$+4 \quad +4$

$a \leq 12$

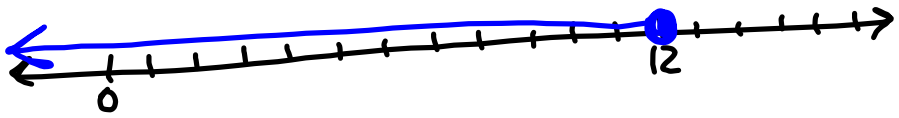
set builder notation

$\{a \mid a \leq 12\}$

interval notation

$(-\infty, 12]$

graph



The Multiplication Property for Inequalities

A, B and C

If $C > 0$ i.e. C is positive

then if $A < B$

$AC < BC$

If $C < 0$ i.e. C is negative

if $A < B$

Then $AC > BC$

ex $(2)5 > 2(2)$

$10 > 4$

true

$(-2)5 > 2(-2)$

$-10 > -4$

No, false

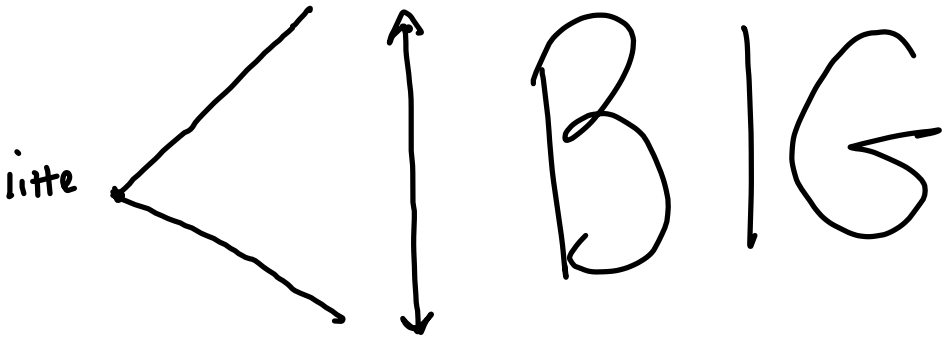
$-10 < -4$

$(4)^{2}\frac{1}{2} > \frac{1}{4}(4)^{1}$

$2 > 1$

$(-4)^{2}\frac{1}{2} > \frac{1}{4}(-4)$

$-2 < -1$



$5 > 2$

$<$

$>$

Solve

$100[2.5x - 3.48 < -4.9x + 2.07]$

$250x - 348 < -490x + 207$

$+490x \quad +348 \quad +490x \quad +348$

$250x < -490x + 555$

$+490x \quad +490x$

$740x < 555$

$\frac{740x}{740} < \frac{555}{740}$

$x < .75$

Graph