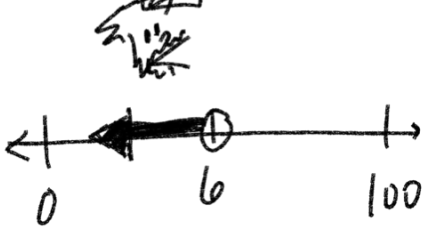
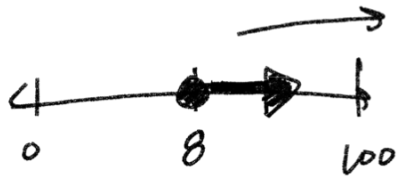
S-PA Pre-Algebra Session 9 7/6

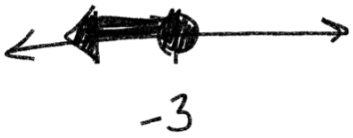
1.) $x < 6$



2.) $8 \leq x$



3.) $-3 \geq x$



4.) $x \geq -4$

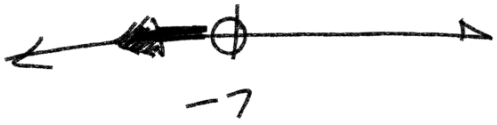
$x + 5 \leq 11$

$-5 \quad -5$

$x \leq 6$

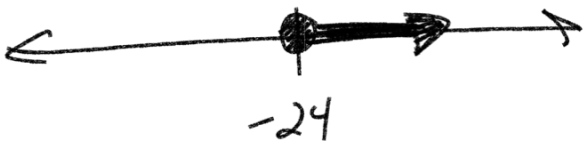
$\frac{-6x}{-6} > \frac{42}{-6}$ flip!!

$x < -7$



1.) $8\left(\frac{x}{8}\right) \geq (-3)8$

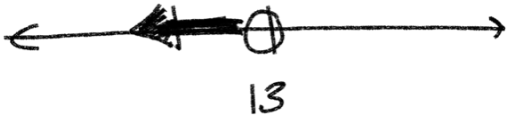
$x \geq -24$



2.) $x - 4 < 9$

$+4 \quad +4$

$x < 13$



3.) $-5x \leq -30$

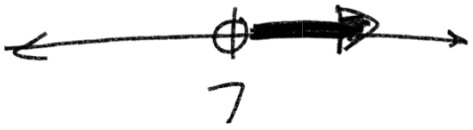
$\frac{}{-5} \quad \frac{}{-5}$

larger → $x \geq 6$

4.) $13 < x + 6$

$-6 \quad -6$

$7 < x$



Pre-Algebra
Chapter 2 Practice Test

1.) (1 pt each) Properties of Numbers (2-1) Write the name of the property shown.

a) $3(a + b) = 3a + 3b$ Distributive

b) $2 \times 1 = 2$ identity

c) $3 + 13 + 7 = 3 + 7 + 13$ commutative

d) $(17 \times 5) \times 20 = 17 \times (5 \times 20)$ associative

Commutative
associative
identity
inverse
distributive

2.) (4 pts each) Distributive Property (2-2) Simplify each expression.

a) $7(5a + 3)$ $35a + 21$

b) $(4 + x)(6)$

c) $-(3y + 2)$ $-3y - 2$

d) $-8(11a - 9)$

3.) (4 pts each) Simplifying Variable Expressions (2-3) Simplify each expression.

a) 15a + 8b - 9a + 3b

$15a + (-9a) = 6a$

$8b + 3b = 11b$

$6a + 11b$

b) 8c + 7(2c - 3)

c) 3(4 + x) - 8(2x + 4)

$12 + 3x - 16x - 32$

$-13x - 20$

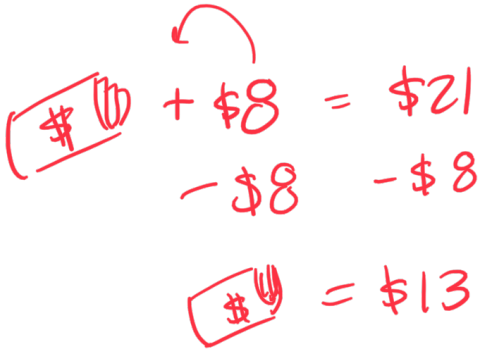
d) 9y - 2(3y - 5) + 7

4.) (4 pts each) Solving Equations by Adding or Subtracting (2-5) Solve each equation.

a) b + 8 = 21

$-8 \quad -8$

$b = 13$



b) -14 + x = 18

c) $a - 11 = 54$

$+11 \quad +11$

$a = 65$

d) $38 = y - 13$

5.) (4 pts each) Solving Equations by Multiplying or Dividing (2-6) Solve each equation.

a) $\frac{6a}{6} = \frac{72}{6}$

$a = 12$

b) $8\left(\frac{y}{8}\right) = (5)8$

$y = 40$

c) $-15t = 45$

d) $\frac{w}{-9} = 12$

6.) (2 pts each) Inequalities and Their Graphs (2-8) Graph the solutions to each inequality on a number line.

a) $6 > y$

$y < 6$

b) $q \leq 12$

c) $b > -3$

d) $-5 \leq h$

7.) (4 pts each) Solving One-Step Inequalities by Adding or Subtracting (2-9) Solve each inequality. Graph the solutions.

a) $7 + a < 9$

b) $29 \leq x + 12$

$x + 12 \geq 29$

$-12 \quad -12$

$x \geq 17$

c) $-30 > b - 9$

8.) (4 pts each) Solving One-Step Inequalities by Multiplying or Dividing (2-10) Solve each inequality. Graph the solutions.

a) $9x \leq 36$

b) $16 < \frac{y}{5}$

c) $48 \geq -8b$

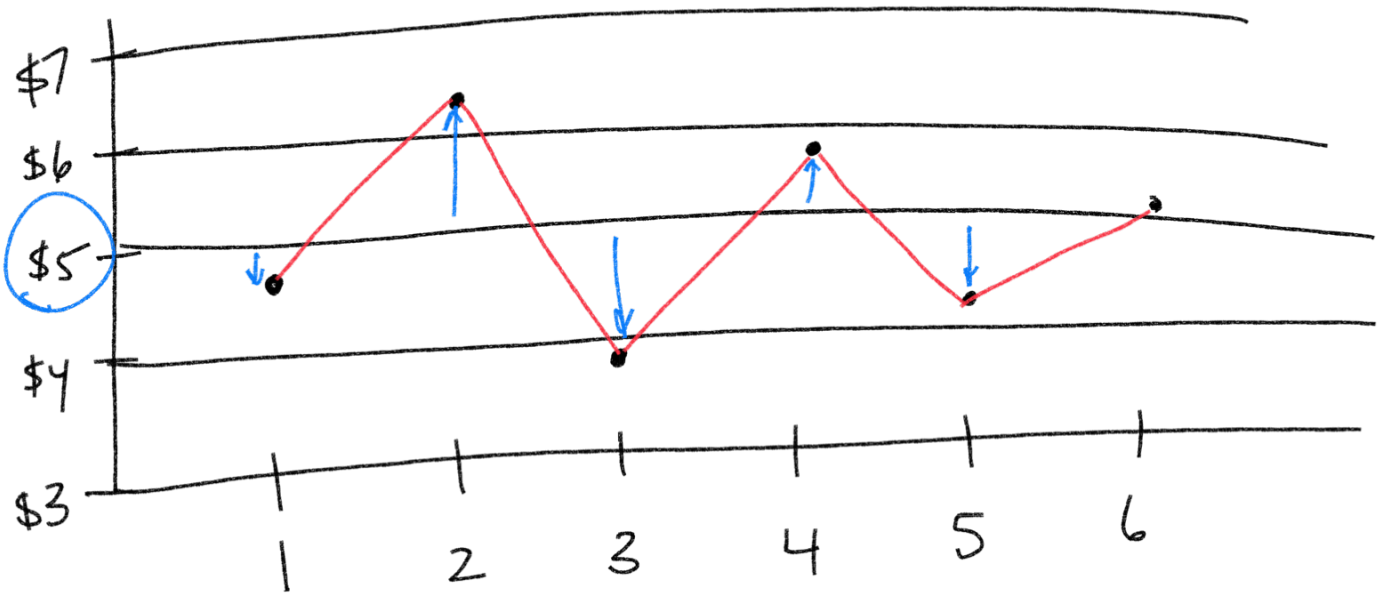
$\frac{48}{-8} \quad \frac{-8b}{-8}$

$-6 \leq b$

$b \geq -6$

1	2	3	4	5	(6)
$4.80	$6.30	$3.95	$5.85	$4.26	$5.25

Estimate by clustering



$5 * 6 = $30

Estimate by clustering

$21.40 + $22.08 + $18.98 + $19.35 ≈ $80

cluster around: $20

$20 * 4 = $80

$7.8 * 11.95$

$\downarrow \quad \downarrow$

$8 * 12 = \boxed{96}$

$74.8 \div 7.8$

$\downarrow$

$75 \div 8 = 9.375$

$72 \div 8 = \boxed{9}$

Round the smaller number first

$82 * 8.9$

$\downarrow \quad \downarrow$

$80 * 9 = \boxed{720}$

$126.2 \div 23.9$

$\downarrow$

$120 \div 24 = \boxed{5}$

$24^{1}, 48^{2}, 72^{3}, 96^{4}, 120^{5}, 144, 168, \ldots$

$126.2 \div 23.9$

$\downarrow \quad \downarrow$

$120 \div 20 = \cancel{6}$

$126.2 \div 23.9$

$\downarrow \quad \downarrow$

$125 \div 25 = \boxed{5}$

Mean Median Mode

Mean — Average $\frac{\text{sum of all numbers}}{\text{how many numbers}}$

Median - Middle Number (odd set) or Average of the middle two numbers (even)

Mode - most frequent

~~6, 3, 3, 12, 7, 36, 15, 20~~, 40

1st put into order

In order

2, 3, 3, 6, 12, 15, 20, 36, 40

Mean: $\frac{2+3+3+6+12+15+20+36+40}{9} = \frac{137}{9}$

$= 15.2$

Median ~~2, 3, 3, 6~~, 12, ~~15, 20, 36, 40~~

median = 12

Mode: 3