

Section 1.1 – Expressions and Formulas

Objectives:

1. To use order of operations to evaluate expressions and formulas.
2. To use a graphing calculator to evaluate expressions and formulas.

- Work Together

- Two formulas for the perimeter of a rectangle are $P = \underline{\hspace{2cm}}$ and $P = \underline{\hspace{2cm}}$.
Let $l = 12$ and $w = 8$. Find the perimeter of the rectangle using each formula.
 - When you used the formula $P = \underline{\hspace{2cm}}$, did you add first or did you multiply first?
 - When you used the formula $P = \underline{\hspace{2cm}}$, did you add first or did you multiply first?

- Think and Discuss

- Evaluating Expressions

Look at this new expression and the ways it has been simplified.

	$3 + 5 - 6 \div 2$	
$3 + 5 - 6 \div 2$	$3 - 1 \div 2$	$3 + 5 - 6 \div 2$
$8 - 6 \div 2$	$3 - \frac{1}{2}$	$3 + 5 - 3$
$2 \div 2$	$2\frac{1}{2}$	$8 - 3$
1	$2\frac{1}{2}$	5

- If one person in your group worked for TI, another for Casio, and another for HP, what guarantee do I have that each company will develop a calculator that would produce the same answer?
 - Which of the answers above are incorrect and why?
 - A phrase to help remind you of the correct order:
- Examples:
 - Find the value of $[384 - 3(7 - 2)^3] \div 3$
 - Evaluate $s - t(s^2 - t)$ if $s = 2$ and $t = 3.4$ (What if $t = -3.4$?)
 - Evaluate $\frac{8xy + z^3}{y^2 + 5}$ if $x = 5$, $y = -2$, and $z = -1$
 - Find the area of a trapezoid with base lengths of 13 meters and 25 meters and a height of 8 meters.

Homework: p. 7 – 1-10 all, 21, 37, 41, 43, 44, 50-53 all

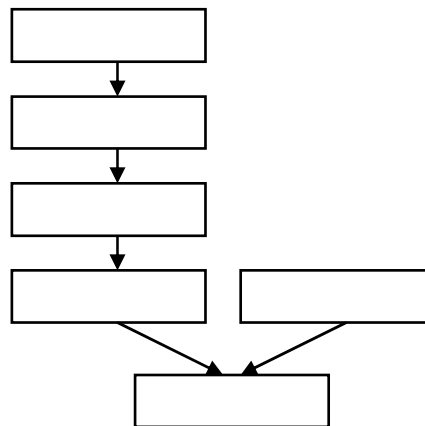
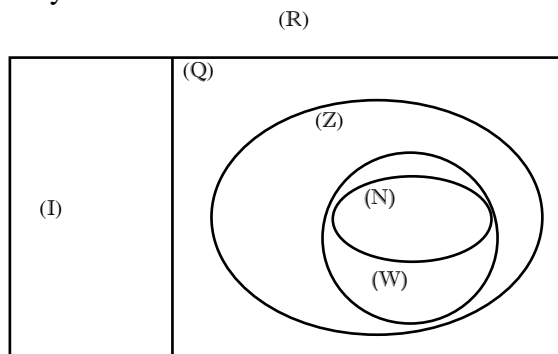
Section 1.2 -- Properties of Real Numbers (More Rules)

Objectives:

1. To determine the sets of numbers to which a given number belongs.
2. To use the properties of real numbers to simplify expression

I. Number Sets

A. Family Tree



B. Examples -- Name the number set:

1. $\frac{3}{5}$
2. $-2.5\overline{2}$
3. $\sqrt{5}$
4. $\sqrt{121}$
5. 32.1
6. What about 0.101101110...?

II. Properties (other rules)

A. Properties

1. Commutative
 - a)
 - b)
2. Associative
 - a)
 - b)

3. Identity

a)

b)

4. Inverse

a)

b)

5. Distributive Property (the _____ way to mix _____ and _____)

B. Examples

1. Add: $2 + 3 + 7 + 6 + 8 + 4$

2. Simply: $2(2x - 3y) - 8(x + 4y)$

Homework: p. 14 – 1-17 all, 23, 37, 40-42 all, 45, 53, 55, 62-64 all, 66-68 all

Section 1.3 – Solving Equations

Objectives:

1. To translate verbal expressions and sentences into algebraic expressions and equations.
2. To solve equations.
3. To solve formulas for a specific variable

I. Translate in to an expression or equation

Example

1. 6 more than a number
2. 2 less than the cube of a number
3. 10 decreased by the product of a number and 2
4. 3 times the difference of a number and 7

II. Solve equations

Examples

1. $s - 5.48 = 0.02$

2. $18 = \frac{1}{2}t$

3. $53 = 3(y - 2) - 2(3y - 1)$

4. Home Improvement: Carl wants to replace the 5 windows in the 2nd-story bedrooms of his home. His neighbor Will is a carpenter and he has agreed to help install them for \$250. If Carl has budgeted \$1000 for the total cost, what is the maximum amount he can spend on each window?

II. Solve Formulas for a given variable

Examples

1. $V = \pi r^2 h$ solve for h .

2. $qr + s = t$ solve for q .

Homework: p. 22 – 1, 2, 9-21 all, 39, 41, 47-50 all, 53, 55, 57, 62, 71-74 all

Section 1.4 – Solving Absolute Value Equations

Objectives:

1. To equations that contain absolute values.

- Definition of absolute value – _____ from _____.

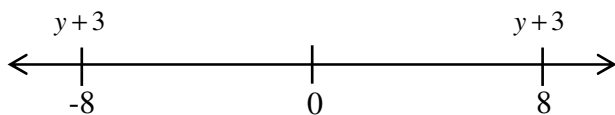
Examples

1. Find the absolute values of:

- 10
- -4

2. Evaluate: $2.7 + |6 - 2x|$ if $x = 4$

3. Solve: $|y + 3| = 8$ (read using definition)



4. Solve: $|6 - 4t| + 5 = 0$

Homework: p. 30 – 1-4 all, 6-12 all, 31, 43, 45, 56-68 all

Section 1.5 and 1.6 – Solving Inequalities and Absolute Inequalities

Objectives:

1. To solve inequalities and graph the solution sets.
2. To solve compound inequalities.
3. To solve inequalities involving absolute value

• Note:

1. Close circle --
2. Open circle --

Examples

1. $4y - 3 \geq 5y + 2$

2. Note: When you _____ or _____ **BOTH** sides by a _____ number you must change the _____ of the arrow

$$12 \geq -.03p$$

3. $-x > \frac{x-7}{2}$

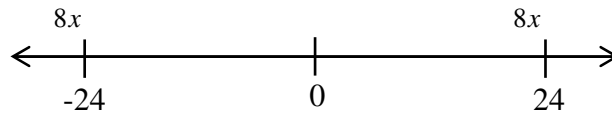
4. Frank has at most \$15.00 to spend today. He buys a bag of pretzels and a bottle of juice for \$1.59. If gasoline at this store costs \$2.89 per gallon, how many gallons of gasoline, to the nearest tenth of a gallon, can Javier buy for his car?

End of Day 1

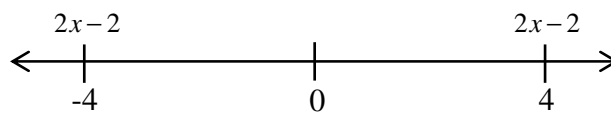
5. $10 \leq 3y - 2 \leq 19$

6. $x + 3 < 2$ or $-x \geq -4$

7. $|8x| \leq 24$



8. $|2x - 2| \geq 4$



9. To prepare for a job interview, Linda researches the position's requirements and pay. She discovers that the average starting salary for the position is \$38,500, but her actual starting salary could differ from the average by as much as \$2450. Write an absolute value inequality to describe this situation.

Homework:

Day 1: p. 36 – 1-9 all, 19, 36, 41, 45, 54-60 all

Day 2: p. 45 – 1-10 all, 19, 22, 23-28 all, 39, 45, 53, 67-71 all

Day 3: p. 40 – 1-18 all