

DSPM 0700 CH 1 - 2 Summary

ADDITION

- **2 positives:** Add normally
- **2 negatives:** $-3 + -7 = -10$ Add $3 + 7$ attach (-)
 1. Ignore the signs,
 2. Add the 2 numbers
 3. Attach a negative sign
- **One Pos and the other Neg.** $-8 + 5 = -3$ Subtract $8 - 5$ attach (-)
 1. Ignore the signs
 2. Subtract the 2 numbers
 3. Attach the sign of the larger of the original numbers

SUBTRACTION

1. Change Subtraction to Addition
2. Take the opposite of the next number
3. Use your addition rules

$$\begin{array}{ll} 2 - 7 = 2 + (-7) = -5 & (2 \text{ minus } 7 \text{ changes to } 2 \text{ plus } -7) \\ -2 - 7 = -2 + (-7) = -9 & (-2 \text{ minus } 7 \text{ changes to } -2 \text{ plus } -7) \\ 2 - (-7) = 2 + 7 = 9 & (2 \text{ minus } -7 \text{ changes to } 2 \text{ plus } 7) \\ -2 - (-7) = -2 + 7 = 5 & (-2 \text{ minus } -7 \text{ changes to } -2 \text{ plus } 7) \end{array}$$

MULTIPLICATION

$$\begin{array}{ll} (+)(+) = (+) & (3)(4) = 12 \\ (-)(-) = (+) & (-3)(-4) = 12 \\ (+)(-) = (-) & (3)(-4) = -12 \\ (-)(+) = (-) & (-3)(4) = -12 \end{array}$$

DIVISION

$$\begin{array}{ll} (+) / (+) = (+) & (12) / (4) = 3 \\ (-) / (-) = (+) & (-12) / (-4) = 3 \\ (+) / (-) = (-) & (12) / (-4) = -3 \\ (-) / (+) = (-) & (-12) / (4) = -3 \end{array}$$

**When multiplying and there are

even # of (-) the answer is positive $(3)(-2)(-1) = +6$

odd # of (-) the answer is negative $(-3)(-2)(-1) = -6$

$$(-\#)^{\text{even}} = \text{positive} \quad (-3)^4 = (-3)(-3)(-3)(-3) = +81$$

$$(-\#)^{\text{odd}} = \text{negative} \quad (-3)^5 = (-3)(-3)(-3)(-3)(-3) = -243$$

Applications

- (a) Define variables
- (b) Write equation or # sentence
- (c) Solve (Show work)
- (d) Answer in complete sentence

EX: A = amount in account
 $A = 568 - 46 - 87 - 129 + 94$
(Show all addition and subtraction)
There is \$400 left in the account.

Equations

- (a) Write original problem
- (b) Show Add, Subt, Mult, Div
- (c) Circle Final Answer

EX: $3 + x = 9$
 $3 - 3 + x = 9 - 3$
 $x = 6$

Distributive Property

- (a) Change all subtraction to addition and take the opposite of the next number
- (b) Multiply outside # to all #'s on the inside of ()

EX: $-3(2a - 5b + 7)$
 $-3(2a + -5b + 7)$
 $-3(2a) + -3(-5b) + -3(7)$
 $- 6a + 15b - 21$

Order of Operations

- (a) Parentheses
- (b) Exponents
- (c) Mult or Div from left to right
- (d) Add or Subt from left to right

EX: $(82 - 14) \times [(10 + 45 / 5) - (6 * 6 - 5 * 5)]$
 $68 \times [(10 + 9) - (36 - 25)]$
 $68 \times [19 - 11]$
 $\frac{68 \times 8}{544}$
**(Show multiplication work)

Substitutions

- (a) Write original problem
- (b) Show substitution
- (c) Work out and circle answer

EX: $- (- x)$ when $x = -2$
 $- (- (-2))$
 $- (2)$
 $- 2$

Combine Like Terms

- (a) Change all subtraction to addition and take the opposite of the next number
- (b) Group like terms
- (c) Add #'s and attach letters

EX: $2a - 3b + 7 - 5a - 8b + 5$
 $2a + -3b + 7 + -5a + -8b + 5$
 $\underline{2a + -5a + -3b + -8b + 7 + 5}$
 $-3a - 11b + 12$