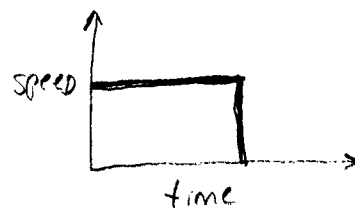
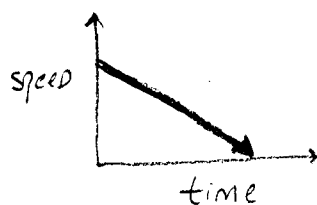
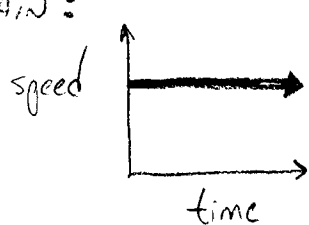
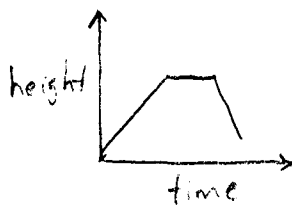
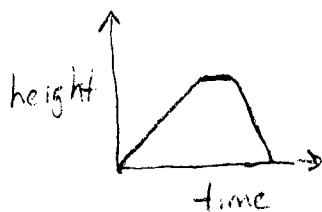


① Simplify: $3(x+y) + 2(x+y) - 4x$

- ② A radio controlled (RC) car moves until it hits a wall. Which graph shows this, explain:



- ③ A plane takes a skydiver to the "jump" altitude. Which skydiver would you rather be? Why?



- ④ DEFINE A RELATION.

RELATION A SET OF ORDERED PAIRS.

(EX) $\{(2, 3), (5, -1), (8, 6)\}$

- EXAM 1 THURSDAY
- RETURN/REVIEW graded HW3 & Quiz 3

(*)

Summary of Fraction Rules:

$+$, $- \Rightarrow$ Common denominator

$\cdot \Rightarrow \frac{\text{tops} \cdot \text{tops}}{\text{bottoms} \cdot \text{bottoms}}$

$\div \Rightarrow$ flip and $\cdot$ the bottom

NOTE: make a fraction out of any integer by putting it over 1

Sign Rules:

(EX) $3 + -2$

$\left\{ \begin{array}{l} 3 \text{ plus negative } 2 \\ 3 \text{ minus } 2 \end{array} \right\}$ SAME RESULT

$3 - 2$ preferred in algebra

(EX) $3 + 2$

(EX) $-3 - 2$

or

$-3 + -2$

(EX) $9 + 8 = 17$

(EX) $9 - 8 = 1$

(EX) $-9 - 8 = -17$

(EX) $-9 + 8 = -1$

Summary: $+$, $-$ SSA, KSS Same sign add, keep same sign
DSS, BOW Different sign subtract, biggest one wins

(EX) $-5 - 5$	{	$-5.6 - 3.4$
$-5 + 8$		$-1 - 1 - 1 - 1$
$8 - 6$		$5 - 12$
$-6 - 2$		$-12 + 12 - 12$
$-6 + (-2)$		$-12 - 12 + 12$
$-10 + 8$		$-12 + 12 + 12$

Special case: $6 - (-2)$

$$6 - (-2) = 8$$

Subtracting a negative is a positive.

The multiply and divide rules are easier:

"SPDN" Same Signs Positive, Different Signs Negative
 "spit in"

(EX) $2 \cdot 3 = 6$ or $-2 \cdot -3 = 6$

(EX) $\frac{8}{2} = 4$ or $\frac{-8}{-2} = 4$

(EX) $-2 \cdot 3 = -6$ or $2 \cdot -3 = -6$

(EX) $\frac{8}{-2} = -4$ or $\frac{-8}{2} = -4$

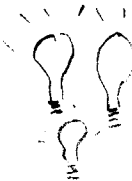
*m Summary of Sign Rules:

$$+, - \Rightarrow \text{SSA, KSS}$$

$$\Rightarrow \text{DSS, BOW}$$

$$\Rightarrow \text{SPECIAL CASE } -(-) = \overset{+}{\cancel{(-)}}$$

$$\cdot, \div \Rightarrow \text{SPDN}$$

 TIP³: Figure out THE sign first, then do the math !!!

(Ex) $-8 \cdot -9 = \text{positive } + 72$
(SPDN) (3·9)

(Ex) $-7 - 7 \Rightarrow \text{NEGATIVE } -14$
(SSA, KSS) (7+7)

(Ex) $-6(5)$

$$-6 + 5$$

$$-6(-5)$$

$$6 - 5$$

$$6 - (-5)$$

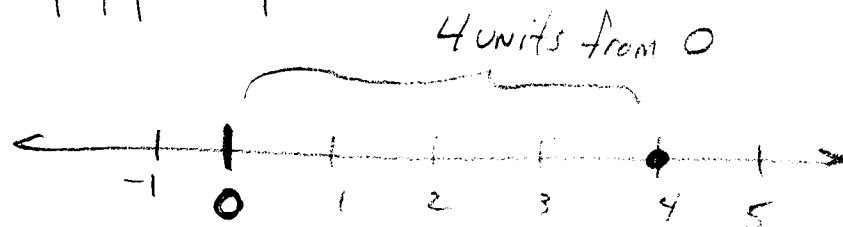
$$\begin{array}{r} -6 \\ -5 \\ \hline \end{array}$$

(*d)

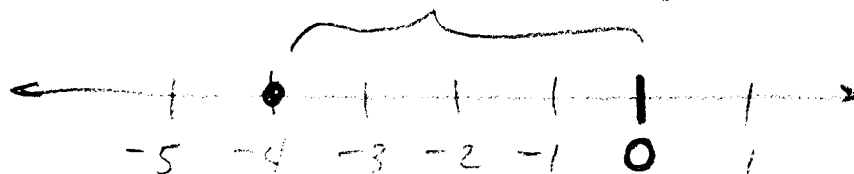
ABSOLUTE
VALUE
of a
number

the distance of a number from zero
on a number line. Distance is
Always positive. Symbol $|N|$

(Ex) $|4| = 4$



(Ex) $|-4| = 4$ 4 units from 0



(Ex) $|3| =$

$|-3| =$

$|\frac{1}{2}| =$

$|\frac{-1}{2}| =$

$|0.5| =$

Note: $|$ ABS VALUE $|$ the absolute value symbol is also
A grouping symbol.

RECALL:

EQUATION MATH EXPRESSION WITH AN EQUALS SIGN

SOLUTION TO AN EQUATION A ^(NUMBER) VALUE for the VARIABLE (or VARIABLES) in a EQUATION WHICH, WHEN SUBSTITUTED into the ORIGINAL EQUATION produce a "TRUE" expression. $\text{EX } 3x = 6$

$\uparrow$
2 IS A SOLUTION TO THIS EQUATION.

If I add +3 to something, how could I "undo" it?

$$+3 - 3 = 0$$

If I subtract 3 from something, how could I "undo" it?

$$-3 + 3 = 0$$

(*d) Addition and subtraction undo each other

★ (*m) GRE The Golden Rule of Equations
do unto others...

"Whatever you do to one side of an equation,
do to the other"

$$\begin{array}{ccc} x + 5 & = & 8 \\ \text{LEFT} & & \text{RIGHT} \\ \text{SIDE} & & \text{SIDE} \end{array}$$

Let's put this all together to solve and check our solution to equations using addition or subtraction "undos" as needed to get "the variable by itself" (EX) $X = 2$

↑
+1 coefficient,
No other terms on
left side.

Notes: $Z = X$

$X = Z$

by Symmetric Property

* (EX) Solve: $X - 8 = 15$
 $\quad \quad + 8 \quad \quad + 8$

$X = 23$

GOAL: use "undos" and the GAE to get the variable "by itself."

CK: $() - 8 \stackrel{?}{=} 15$
 $(23) - 8 \stackrel{?}{=} 15$
 $15 \stackrel{?}{=} 15 \quad \checkmark$

NOTE pattern: complete equation
 $\downarrow$
 WHAT you do to each side
 $\downarrow$
 complete equation
 $\downarrow$
 Rinse and Repeat

Practice:

$$\textcircled{1} \quad h - 3 = -2$$

$$\textcircled{2} \quad 20 = y - 8$$

$$\textcircled{3} \quad b - 40 = -40$$

$$\textcircled{4} \quad m - (-12) = 10$$

$$\textcircled{5} \quad w - \frac{3}{2} = \frac{1}{4}$$

$$\textcircled{6} \quad 19 + h = -4$$

Homework:

- Pg 101 # 64 to 74, 81.

- Pg 132 # 15 to 23. Include checks!!