

BE-1B

Simplify:

① $8 \cdot 6 - 3^3 - (4 \cdot 2 - 3)$

② $a + b + a - 3b$

③ $8 - |4 - 9| + 2$

④ $-3 + 3 \cdot |-5 - 2| + 6$

⑤ What is the range of this function?

$$\{(-2, 4), (2, 0), (-3, 1), (3, 0)\}$$

AHSGE WB

① = Pg 28 # 5

② = Pg 28 # 6

③ = Pg 29 # 11

④ = p 29 # 12

⑤ = Pg 47 # 1

Sign Rules

+, -

Same sign means keep everything the same and just **ADD**

$$+2 + 8 = +10$$

$$-2 - 8 = -10$$

Opposite signs means "biggest sign wins" AFTER YOU **SUBTRACT**

$$+2 - 8 = -6$$

$$-2 + 8 = +6$$

SPECIAL CASE

$$-(-4) = +4$$

•, ÷

SPDN

Same Sign Positive, Different Signs Negative

$$2 \cdot 8 = 16$$

$$-2(-8) = 16$$

$$-2(8) = -16$$

$$2(-8) = -16$$

$$\frac{8}{2} = 4$$

$$\frac{-8}{-2} = 4$$

$$\frac{-8}{2} = -4$$

$$\frac{8}{-2} = -4$$

Fraction Rules

$+$, $-$ Common Denominator so
you can combine like terms!
means $+$, $-$

• tops • tops
bottom • bottoms

Cross cancel or simplify if you can

$\div$ flip the bottom fraction
AND change it to multiplication.

$$\frac{1}{3} + \frac{1}{2} = \frac{2}{6} + \frac{3}{6} = \frac{5}{6}$$

$$\frac{1}{3} \cdot \frac{1}{2} = \frac{1}{6}$$

$$\frac{\frac{1}{3}}{\frac{1}{2}} = \frac{1}{3} \cdot \frac{2}{1} = \frac{2}{3}$$

$$\sqrt{25} = ? \quad \text{Principal Square root}$$

$$-\sqrt{25} = ?$$

$$\pm \sqrt{25} = ?$$

$$\sqrt{x^2} = ?$$

$$\{1, 2, 3, \dots\} \text{ NATURAL}$$

$$\{0, 1, 2, 3, \dots\} \text{ WHOLE}$$

$$\{\dots -3, -2, -1, 0, 1, 2, 3, \dots\} \text{ INTEGERS}$$

R
E
A
L

$$\left\{ \frac{a}{b} \right\} \text{ or } \{ \text{terminating and repeating decimals} \}$$

RATIONAL

fraction

$$\{ \text{not terminating, not repeating} \}$$

IR RATIONAL

NOT

$$\sqrt{16} = 4 = \text{RATIONAL} = \text{PERFECT SQUARE}$$

$$\sqrt{15} = ? = \text{irrational}$$

$$3.87298334?????...$$

π and non-perfect square roots
are the only irrational numbers
you will use in Algebra 1B

$$\text{Probability} = \frac{\# \text{ successes}}{\# \text{ total}}$$

$$\text{ODDS} = \frac{\# \text{ successes}}{\# \text{ failures}}$$

$$P(\text{rolling a 4 on one die}) = \frac{1}{6}$$

$$\text{Odds}(\text{rolling a 4}) = \frac{1}{5} \text{ or } 1:5 \text{ for}$$

Like Terms

- Same variable
- Variable has same exponent

number $\pm$ numbers OK

variable $\pm$ numbers NOT OK

COMBINE (means $+$ or $-$)

* CAN ONLY $+$ or $-$ like terms

$$\text{EX) } 5(-2x) + 10x = -10x + 10x = \boxed{0}$$

$$\begin{aligned} \text{EX) } \frac{9 - 18x}{3} &= \frac{9}{3} - \frac{18x}{3} \\ &= \boxed{3 - 6x} \end{aligned}$$

Hw: Pg 115 # 1 to 20