

2.1.1. OPERATIONS WITH INTEGERS.

MULTIPLYING & DIVIDING INTEGERS

ex) $3(-2)$

$$3 \times (-2)$$

$$3 \cdot (-2)$$

} SAME; " 3 SETS OF -2 "

$$(-2) + (-2) + (-2)$$

$$= -6$$

ex) $(-5)(-4)$

MEANS "

THE OPPOSITE OF -4 "

OF 5 SETS

$$= \text{OPPOSITE OF } (-4) + (-4) + (-4)$$

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

OPPOSITE OF (-20)

$$= +20$$

SHORTCUT:

① MULTIPLE #S

② DECIDE ON THE SIGN: IF THE SIGNS ARE THE SAME, THE ANSWER IS $(+)$

IF THE SIGNS ARE DIFFERENT, THE ANSWER IS $(-)$

NOTE: IF MULTIPLYING MORE THAN 2 INTEGERS!

YOU HAVE AN EVEN NUMBER OF NEGATIVE SIGNS, THE ANSWER IS (+)

IF ODD, THE ANSWER IS (-)

** SAME RULES FOR \div :

$$\text{ex) } (-4)(-12) = +48$$

$$\text{ex) } (3)(7) = 21$$

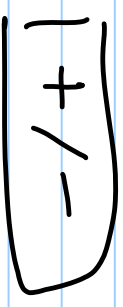
$$\text{ex) } (-5)(+14) = -70$$

Division : ex) $\frac{-144}{12} = -12$

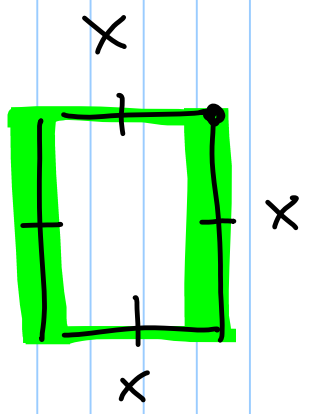
ex) $\frac{132}{-11} = -12$

ex) $\frac{-48}{-6} = +8$

WITH VARIABLES



①

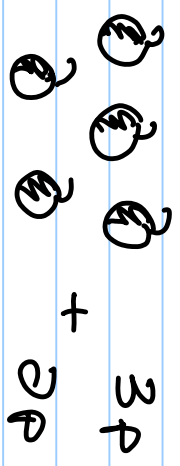


Perimeter
(still length)

$$P = x + x + x + x = 4x$$

Variable DOES NOT CHANGE

②



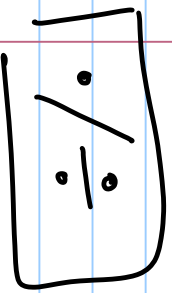
$$P = 4pm$$

Sp ← Still plums

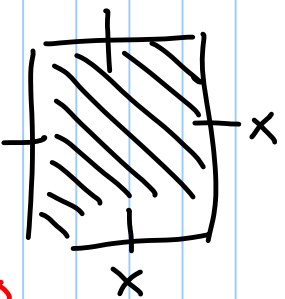
$$\textcircled{3} -4g - (-5g)$$

$$-4g + 5g = +1g$$

"down 4 games & then win 5 games"
for overall total of up 1 game."



①



$$A = x \cdot x \\ = x^2$$

Area is NOT
length. Something
NEW.

NOTE $A_{\square} = l \cdot w$

$$\textcircled{2} \quad (-4g)(-5g) = +20g^2 = 20g^2$$

• Find answers sign
• mult. #s

• mult. variables

3 steps

$$\textcircled{3} \quad \frac{-36x^5y^2}{4x^3y} = \frac{-36 \cdot \cancel{x \cdot x \cdot x \cdot x \cdot x} \cdot \cancel{y \cdot y}}{4 \cdot \cancel{x \cdot x \cdot x} \cdot \cancel{y} \cdot y} = -9x^2y$$

EXERCISES 2.1.1. # 1-8, 16, 17 NOVICE

1-18 APPRENTICE/EXPERT