

Alg  
Rev. 2

$$\begin{aligned} 3(3) &= 9 \\ 3(2) &= 6 \\ 3(1) &= 3 \\ 3(0) &= 0 \\ 3(-1) &= -3 \\ 3(-2) &= -6 \\ 3(-3) &= -9 \end{aligned}$$

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

$$\begin{aligned} (-3)(3) &= -9 \\ (-3)(2) &= -6 \\ (-3)(1) &= -3 \\ (-3)(0) &= 0 \\ (-3)(-1) &= 3 \\ (-3)(-2) &= 6 \\ (-3)(-3) &= 9 \\ (-)(-) &= + \end{aligned}$$

Commutative moved ~~x~~  
+  $a + b = b + a$  ~~2~~  
x  $ab = ba$  ~~3~~

Associative ("group") <sup>20</sup>

+  $a + (b + c) = (a + b) + c$

x  $a(b \cdot c) = (a \cdot b)c$

Id prop

x  $1a = a \cdot 1 = a$

+  $0 + a = a + 0 = a$

x prop of  $-1 = -1(a) = a(-1) = -a$

Zero Product  
Prop.  
 $a \cdot b = b \cdot a = 0$   
then  
 $a = 0$  or  $b = 0$

$\begin{matrix} R_1 \\ R_2 \end{matrix} \rightarrow \begin{bmatrix} 2 & 7 & 1 \\ 3 & 4 & 6 \end{bmatrix}$  red 2 By 3 Matrix  
 blue 2 Rows by 3 cols.  
 Hot Spot Gbv. RC cola

Size must match

$$\begin{bmatrix} 1 & -5 \\ 2 & 4 \end{bmatrix} + \begin{bmatrix} -3 & -7 \\ 4 & 6 \end{bmatrix} = \begin{bmatrix} -2 & -12 \\ 6 & 10 \end{bmatrix}$$

$$+1 + -3 = -2$$

$$-5 + -7 = -12$$



$$\begin{bmatrix} 2 & 4 & 6 \\ 5 & -2 & -3 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 4 & 10 \\ 7 & -6 & -4 \end{bmatrix}$$

$$\begin{aligned} 6 - 10 &= \\ 6 + (-10) &= \\ &= -4 \\ -3 - (-4) &= \\ -3 + 4 &= \end{aligned}$$

$$\begin{bmatrix} 1 & 8 & -4 \\ -2 & -1 & 1 \end{bmatrix}$$

$$2 - 1 = 1$$

$$5 - 7 = -2$$

$$5 + (-7) = -2$$

$$\begin{aligned} 4 + (-4) &= 4 + 4 = 8 \\ -7 - (-6) &= -7 + 6 = -1 \end{aligned}$$

$2 \times 1$

$$\begin{pmatrix} 2 \\ -2 \end{pmatrix} = \begin{bmatrix} 2 \\ -5 \end{bmatrix} = \begin{bmatrix} -4 \\ +10 \end{bmatrix}$$

$$a(b+c) = ab + ac$$

Distributive over +

Prop. of  $\times$



$$A = LW = (x+2)(3) = 3x + 6$$



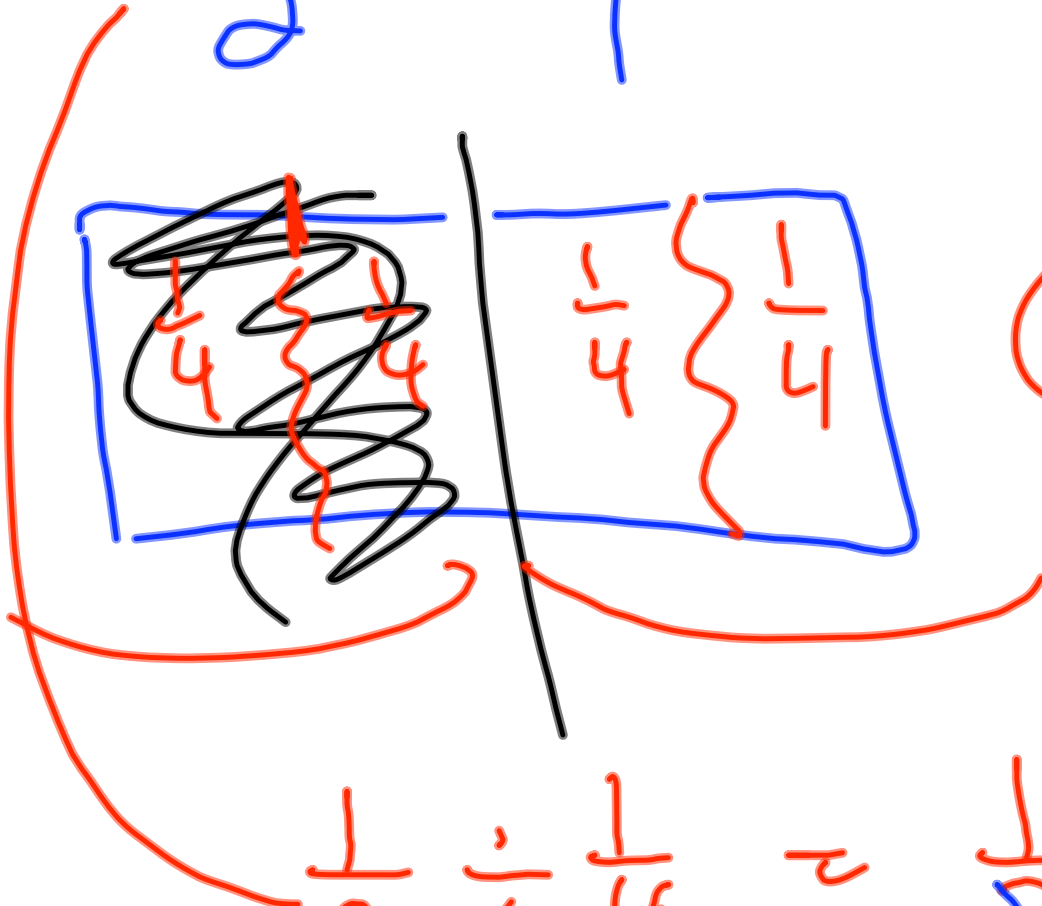
Dist. of  $x$  over subtr.

$$\boxed{a(b-c)} = ab - ac$$

$$\begin{aligned} 5(x-3) &= 5(x + -3) = \\ 5x - 15 &= 5x + 5(-3) \quad \text{or} \\ &= 5x + -15 \\ &= 5x - 15 \end{aligned}$$

$$\frac{1}{2} \div \frac{1}{4}$$

reciprocal



(2)

$\frac{1}{4}$  pieces

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

$$\frac{1}{2} \div \frac{1}{4} = 2$$

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

(2)

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

$$\frac{1}{2} \div \frac{1}{4} = 2$$

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

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