TH-PA Pre-Algebra Week 19 2/8

"Evaluate" → substitute and simplify.

$$\frac{3a^2}{8b^3} \qquad a=2 \quad b=4$$

exponents

PEMDAS

multiplication

$$\frac{3(2)^2}{8(4)^3} = \frac{3(4)}{8(64)} = \frac{12\div 4}{512\div 4} = \boxed{\frac{3}{128}}$$

$$\frac{3\cancel{(4)}^{1}}{2\cancel{8}(64)} = \boxed{\frac{3}{128}}$$

1.) $\dfrac{(6a-8)^2}{b^2+4} \qquad a=2 \quad b=-3$

( ) PEMDAS

$$\frac{(6(2)-8)^2}{(-3)^2+4} = \frac{(12-8)^2}{9+4} = \frac{(4)^2}{13} = \boxed{\frac{16}{13}}$$

$(-3)^2 = (-3)(-3) = 9$

2.) $\dfrac{3x^2 + 4x + 12}{y^3}$ $x = -4$ $y = -1$

$$\frac{3(-4)^2 + 4(-4) + 12}{(-1)^3} = \frac{3(16) + 4(-4) + 12}{-1} = \frac{48 - 16 + 12}{-1}$$

$$(-1)^3 = (-1)(-1)(-1)$$

$$1(-1) = -1$$

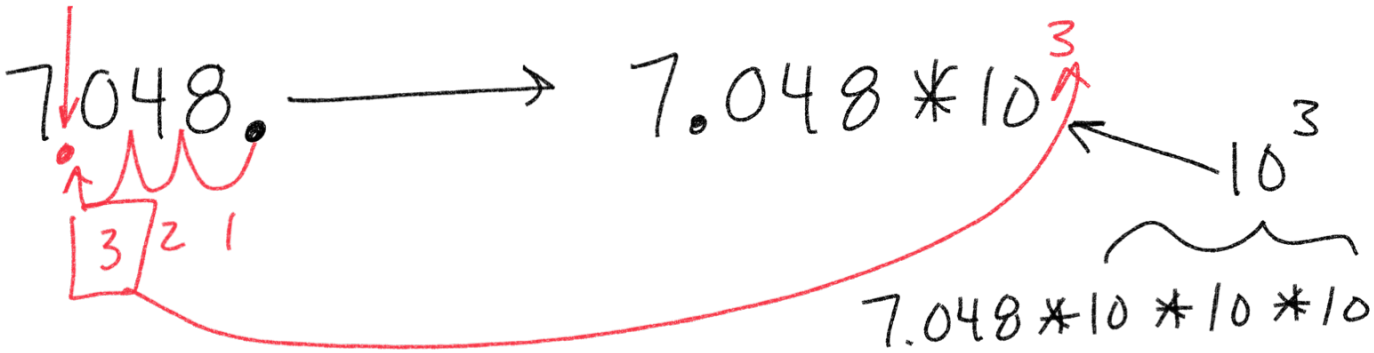
$$= \frac{44}{-1} = \boxed{-44}$$

Avagadro's Number

×10 ×10

6.022000000000000000000000

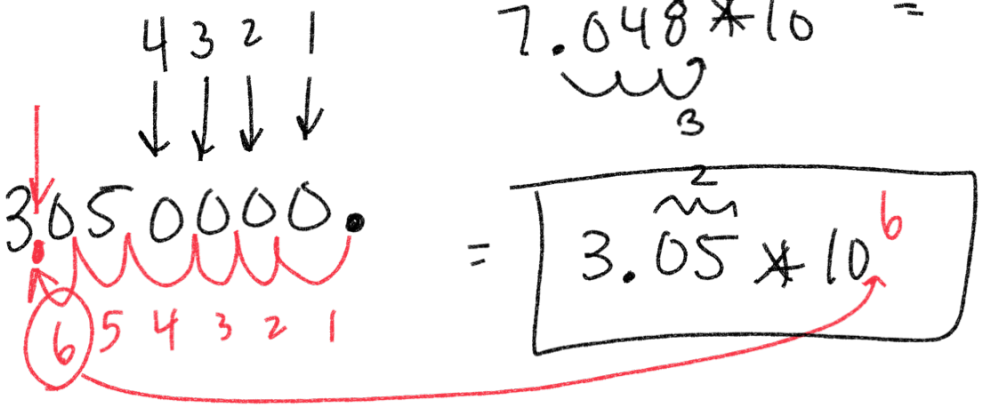
scientific notation $\boxed{6.022 * 10^{23}}$



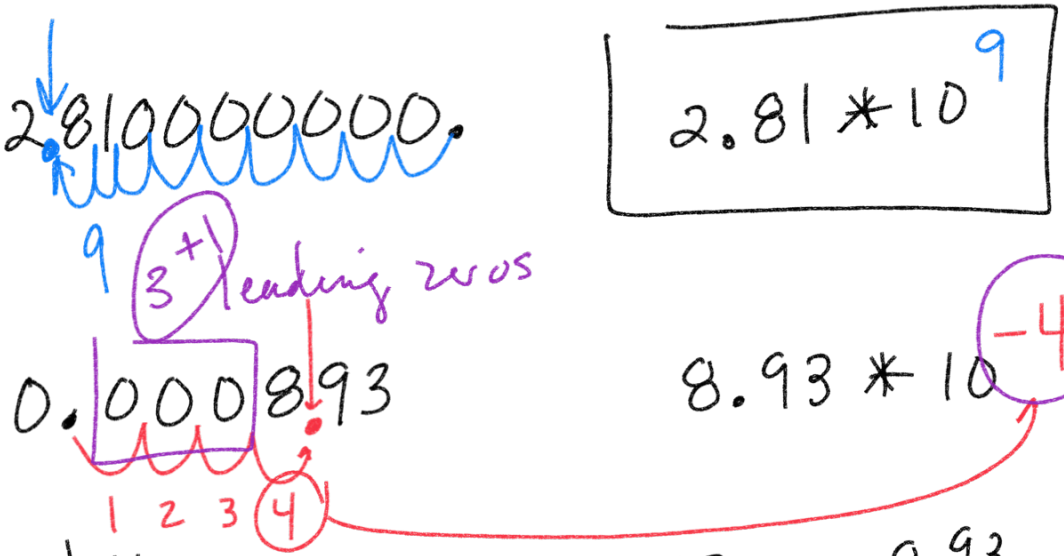
$7.048 * 10 = 70.48$

$7.048 * 10^2 = 704.8$

$7.048 * 10^3 = 7048.$



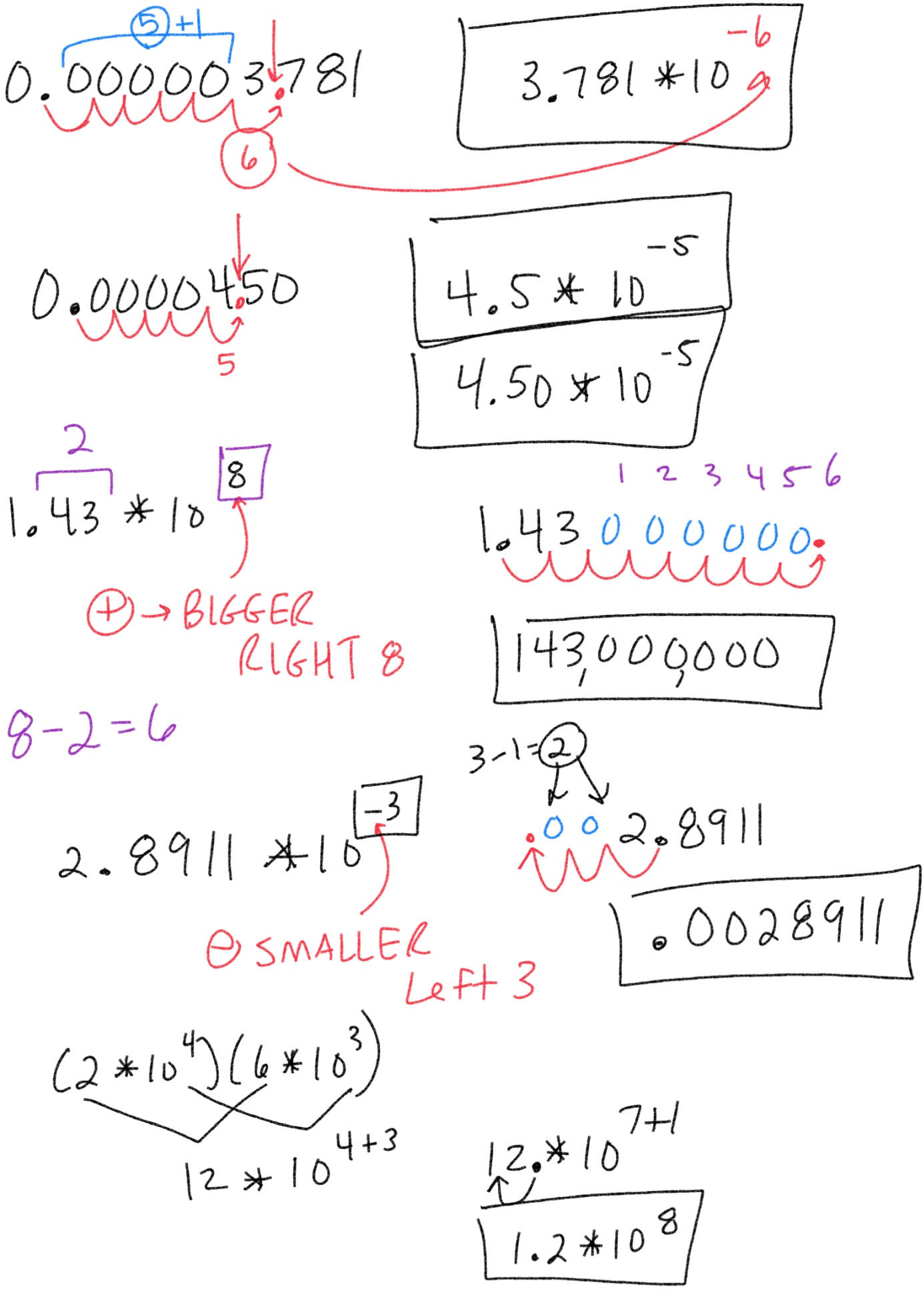
$___ . ___ * 10^{_}$



$10^{-4} = \frac{1}{10^4}$ ← bottom

$\frac{8.93}{10^4} = \frac{8.93}{10000}$

0.000893 ← ten thousandths


5+1
0.0000037 81
6
3.781 * 10^-6
0.0000450
5
4.5 * 10^-5
4.50 * 10^-5
2
1.43 * 10^8
+ → BIGGER
RIGHT 8
8-2=6
1 2 3 4 5 6
1.43000000
143,000,000
3-1=2
-3
2.8911 * 10^-3
- SMALLER
Left 3
00 2.8911
.0028911
(2 * 10^4)(6 * 10^3)
12 * 10^4+3
12.* 10^7+1
1.2 * 10^8

$(8 * 10^{7})(4 * 10^{3})$

$32 * 10^{7+3}$

$32 * 10^{10+1}$

$3.2 * 10^{11}$

$(8 * 10^{5}) \div (2 * 10^{3})$

$\frac{10^{5}}{10^{3}}$

$8 \div 2$

$4 * 10^{5-3}$

$4 * 10^{2}$

1.) $9.86500000.$

7

$9.865 * 10^{7}$

2.) 0.000327

4

$3.27 * 10^{-4}$

3.) $5.37 * 10^{-6}$ ⊖ smaller Left 6

000005.37

0.00000537

4.) $7.1408 * 10^{8}$ ⊕ BIG Right

8

$7.14080000.$

714080000

5.) $(8 * 10^{2})(3 * 10^{5})$

$24 * 10^{2+5}$

$24. * 10^{7+1}$

$2.4 * 10^{8}$

6.) $(9 * 10^{7}) \div (3 * 10^{4})$

$3 * 10^{7-4}$

$3 * 10^{3}$