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WARMUP $1/(5^2 + \sqrt{16})$

1. Convert into scientific notation: 24.7×10^4
2. Convert into scientific notation: 0.3×10^{-2}
3. Add. Write your answer in scientific notation: $(4.577 \times 10^7) + (1.1 \times 10^5)$
4. Multiply. Write your answer in scientific notation: $(1.5 \times 10^8)(6 \times 10^7)$

ALTERNATE METHOD

- (This is the one the book teaches - feel free to use it, but I have found students mess it up more)

$$\begin{aligned} &\bullet (4.577 \times 10^7) + (1.1 \times 10^5) \\ &\quad \downarrow \\ &\bullet (457.7 \times 10^5) + (1.1 \times 10^5) \\ &\quad \downarrow \\ &\bullet 458.8 \times 10^5 \longrightarrow 4.588 \times 10^7 \end{aligned}$$

GO OVER MIXED REVIEW SHEET**SOLVE BOTH WAYS**

- A) By converting to standard form and using long division
- B) By using the shortcut

$$\frac{7.5 \times 10^8}{2.5 \times 10^3}$$

CAREFUL...

- If your answer gives you a coefficient that is not between 1-10, you need to change your answer!
IT IS NOT IN SCIENTIFIC NOTATION YET!

$$\begin{aligned} &(2.6 \times 10^5)(7 \times 10^2) \\ &= 18.2 \times 10^7 \end{aligned}$$

WHICH ONE WILL IT BE?

- A) 1.82×10^6
- B) 1.82×10^7
- C) 1.82×10^8

TRY THESE...

1. $(8.1 \times 10^3)(6.4 \times 10^2)$
2. $\frac{6.2 \times 10^9}{7.75 \times 10^6}$

1. $8.1 \cdot 6.4 = 51.84$	2. $6.2 \div 7.75 = 0.8$
$3 + 2 = 5$	$9 - 6 = 3$
51.84×10^5	0.8×10^3
$= 5,184,000$	$= 800$
<u>$= 5.184 \times 10^6$</u>	<u>$= 8 \times 10^2$</u>

HOMEWORK:

- p.63 (1, 2, 4, 8) and
- p.65 (19, 21, 22)
- No calculator allowed!
- **NO WORK SHOWN = NO CREDIT!**

ADD, SUBTRACT, MULTIPLY, OR DIVIDE?

- The population of the United States is about 3×10^8 people and the population of the world is about 7×10^9 . **How many times larger** is the population of the world than the population of the US?

$$\frac{7 \times 10^9}{3 \times 10^8} \approx 2.3 \times 10^1$$

$$\approx 23$$

(So, 23 USAs equal up to the whole world, population-wise!)

ADD, SUBTRACT, MULTIPLY, OR DIVIDE?

- The population of the United States is about 3×10^8 people and the population of the world is about 7×10^9 . **How much larger** is the population of the world than the population of the US?

$$(7 \times 10^9) - (3 \times 10^8)$$

$$\begin{array}{r} 7,000,000,000 \\ -300,000,000 \\ \hline \end{array}$$

$$6,700,000,000 \quad \text{or } 6.7 \times 10^9$$

Alternate Strategy:

$$(7 \times 10^9) - (3 \times 10^8)$$

$$(7 \times 10^9) - (0.3 \times 10^9)$$

$$6.7 \times 10^9$$