## Warmup 8/( $\left.\sqrt{24}^{2}\right)$ <br> ***Get a whiteboard, marker, and eraser. Keep them in your desk for later!*** <br> 1) Write down as many perfect cube numbers as you know. <br> 2) Find each square root <br> $\sqrt{9}$ <br> $\sqrt{900}$ <br> $\sqrt{64}$ <br> $\sqrt{6400}$ <br> $\sqrt{25}$ $\sqrt{250}$

p. 75 (1-4, 10, 16, 18 - 23)
p. 75

1) 4
2) -22
3) undefined
4) $\frac{3}{7}$ and $-\frac{3}{7}$
5) 12
6) 20 ft
7) 36
8) $\frac{25}{81}$
***MUST have work shown for 2,10 , and $16^{* * *}$


## WHITEBOARD:

$\square$ The first THREE to find each square root win. Do not hold up your whiteboard. Cover your answer and show me when I come over!
$\sqrt{2025}$

| WHITEBOARD: |
| :--- |
| The first THREE to find each square root win. Do not |
| hold up your whiteboard. Cover your answer and |
| show me when I come over! |$\quad$| 1. $\sqrt{\mathbf{2 0 2 5}}$ |
| :--- |
| 45 |

## WHITEBOARD:

$\square$ The first THREE to find each square root win. Do not hold up your whiteboard. Cover your answer and show me when I come over!
$\sqrt{529}$

## More patterns - Perfect Cubes

$\mathbf{1}^{3}=1 \quad$ Any guesses for $\sqrt[3]{2197} ? ~$
$2^{3}=8$
$3^{3}=27$
$4^{3}=64$
$5^{3}=125$
$6^{3}=216$
Any guesses for $\sqrt[3]{17576}$ ?
$7^{3}=343$
$8^{3}=512$
$9^{3}=729$
Estimate for $\sqrt[3]{480}$ ?
$10^{3}=1000$

## ESTIMATING ROOTS

Based on your knowledge of the perfect squares, you should be able to estimate square roots of nonperfect squares pretty accurately.



One estimation example for your notes...

Estimating Square Roots


- 84 is closer to 81 than 100 , so it should be less than 9.5.





## Making our estimates more exact

$\square$ How can you CHECK an estimate?
$\square$ To check an estimate, multiply it back out to see how close it is!
$\square \sqrt{52}$
$7.3 \cdot 7.3=53.29$ (too high)
$\square 7.2 \cdot 7.2=51.84$ (too low)
7.2 was closer, so 7.2 is the best estimate to the nearest tenth.
$\square$ Find the square root. Your answer must be accurate to the nearest hundredth.
$\square \sqrt{\mathbf{1 8}} \quad 4.3 \cdot 4.3=18.49$ (too high)
$4.2 \cdot 4.2=17.64$ (too low)

## Challenge

$4.25 \cdot 4.25=18.0625$ (too high)
$4.24 \cdot 4.24=17.9776$ (too low)
17.9776 is closer to 18 than 18.0625 .

Therefore, 4.24 is the best estimate.

## Group Task: Number Line

Directions: Place all of the numbers from the bag on the number line where you think they should go. You may not use a calculator. Mark the exact spot of each letter with a dot.

- MAKE SURE YOU HAVE EACH LETTER - A through N!!!
MR. LISCHWE SAYS:
Example:

$$
A: 2.5
$$

Don't go straight to long division. Try to reason it out first. If you are not sure, then do long division.


## QUIZ TOMORROW

- If I give homework the day before a quiz, I will always upload an ANSWER KEY to my website.


## Here's what you should do:

Do the homework like normal, without looking at the key.
Then, go on my website, and check your answers. Fix any mistakes in a different color. Use the answer key to study!
3. If you missed a problem, but corrected it using my answer key, you will be able to count it as correct when we officially check it in class the next day. (As long as I can tell you corrected it with a different color)

HOMEWORK (Due tomorrow)
$\square$ Estimating Roots Half-Sheet
$\square$ QUIZ TOMORROW!!!

