

Warm-Up

1. Have math forms? Put them into the Inbox.
2. Please put your binder on your desk so that I can see how you have organized it.
3. Copy the following question on your own piece of paper and then answer them. Put them into your binder in an ORGANIZED way.

Many people on Facebook have argued about the correct answer to this simple math problem:

$$6 \div 2(1+2)$$

Some argue that the answer is 1, while others argue that the answer is 9.

Which answer is correct? How do you know?

Calculators?

We won't use them this week, but we will soon!

If you already have one PUT YOUR NAME ON IT!

Begin bringing it to every class to get into the habit of it. We will begin using them soon.

Real Numbers and the Number Line

August 29, 2018

Definition

- Radicand
 - Definition - the expression under the radical symbol
 - Examples

- If $a^2 = b$, then $a = ???$

Definition

- Perfect Squares
 - Definition - the square of an integer
 - Think about it! What is an integer?
 - Examples

Question for you!

Can we simplify a square root?

Try these questions with a partner on a whiteboard:



Problem 1 Simplifying Square Root Expressions

What is the simplified form of each expression?

A $\sqrt{81} = 9$ 81.

B $\sqrt{\frac{9}{16}} = \frac{3}{4}$ $\sqrt{\frac{9}{16}} = \frac{3}{4}$



Got It? 1. What is the simplified form of each expression?

a. $\sqrt{64}$

b. $\sqrt{25}$

c. $\sqrt{\frac{1}{36}}$

d. $\sqrt{\frac{81}{121}}$

Think

How can you find a square root?

Find a number that you can multiply by itself to get a product that is equal to the radicand.

Let's Talk About It!

Think

How can you find a square root?

Find a number that you can multiply by itself to get a product that is equal to the radicand.



Problem 1 Simplifying Square Root Expressions

What is the simplified form of each expression?

A $\sqrt{81} = 9$ $9^2 = 81$, so 9 is a square root of 81.

B $\sqrt{\frac{9}{16}} = \frac{3}{4}$ $(\frac{3}{4})^2 = \frac{9}{16}$, so $\frac{3}{4}$ is a square root of $\frac{9}{16}$.



Got It? 1. What is the simplified form of each expression?

a. $\sqrt{64}$

b. $\sqrt{25}$

c. $\sqrt{\frac{1}{36}}$

d. $\sqrt{\frac{81}{121}}$

Question for you!

Will every square root give you a perfect square answer?

What does your neighbor think?

What do we think as a class?

Question for you!

How can we estimate the square root of a radicand when it is not a perfect square?

With a neighbor, try to estimate $\sqrt{386}$ on your whiteboard. Do NOT use a calculator!

How did we do?

Method 1 Estimate $\sqrt{386}$ by finding the two closest perfect squares.

The perfect squares closest to 386 are 361 and 400.

$$19^2 = 361$$

$$20^2 = 400 \quad \leftarrow 386$$

Since 386 is closer to 400, $\sqrt{386} \approx 20$,
and the side length is about 20 microns.



Method 2 Estimate $\sqrt{386}$ using a calculator.

$$\sqrt{386} \approx 19.6 \quad \text{Use the square root function on your calculator.}$$

The side length of the square is about 20 microns.

Try a few on your own!

Simplify each expression.

9. $\sqrt{36}$

10. $\sqrt{169}$

11. $\sqrt{16}$

Estimate the square root. Round to the nearest integer.

19. $\sqrt{17}$

20. $\sqrt{35}$

21. $\sqrt{242}$

Extend your thinking

What happens if the radicand is negative?

For example, $\sqrt{-16}$

Wrap-Up

On your sticky note:

1. Put your initials in the bottom right-hand corner
2. Draw a line horizontally (left to right) on your sticky note
3. On the top half write one thing that you learned from today's lesson
 - a. This could be new or could be something that was refreshed for you)
4. On the bottom half write one thing that you would like to have clarified from today's lesson
5. Put your sticky note on the board on the right side of the classroom

Homework - Please add to your agenda!

- Make perfect square flashcards for 1^2 through 25^2 and begin memorizing them
 - You will be quizzed on these on Friday
- In your textbook on page 20-21, please complete numbers 14, 16, 18, 22, 23, 63