

Algebra II
Lesson #3 Unit 5
Class Worksheet #3
For Worksheet #3

Introduction to the Imaginary Numbers

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I am not sure how early students are taught about the integers, but the fact that the temperature can go below zero leads to the need for negative numbers.

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The meaning of, and the need for, the number zero can be reinforced with the equation ' $5 + \underline{\quad} = 5$ '. As the mathematics becomes more advanced, the equation becomes ' $5 + \underline{\quad} = 3$ ', which leads the students to appreciate the need for negative integers.

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The meaning of, and the need for, the number zero can be reinforced with the equation ' $5 + \underline{\quad} = 5$ '. As the mathematics becomes more advanced, the equation becomes ' $5 + \underline{\quad} = 3$ ', which leads the students to appreciate the need for negative integers.

Repeated addition leads to the concept of multiplication and to equations like $5 \times \underline{\quad} = 20$. Once again, as the mathematics advances, equations like $5 \times \underline{\quad} = 3$ leads to the concept of, and the notation used for, fractions.

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Exponents are eventually introduced, leading to equations like $x^2 = 49$. However, when equations like $x^2 = 5$ are first encountered, students can only approximate the solution. The only way to represent the exact value of the irrational number solutions involves the use of the radical sign, a symbol that was created for that purpose.

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Now the mathematics has advanced to the point that we need to introduce a new type of number. A number that will be a solution of the equation $x^2 = -1$. Certainly, this number is not a real number. If k represents any real number, $k^2 \geq 0$!! The new number we need is i . Yes, the number i .

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$$i =$$

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Note: Electrical engineering students call this number j . They use the symbol 'i' for the measure of the current flowing in a circuit.

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where b is a real number**

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Any number that can be expressed in the form **bi** where b is a real number and $i = \sqrt{-1}$ is an imaginary number.

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Here are several examples of imaginary numbers.

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The square root of a negative number is an imaginary number.

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The square root of a negative number is an imaginary number. Writing these numbers in simplest form will be considered next. Make sure that you understand that the cube root of a negative number is a (negative) real number.

Algebra II Class Worksheet #3 Unit 5

Express each of the following as imaginary numbers in bi form. (Simplify any square roots.)

1. $\sqrt{-9} = \underline{\hspace{2cm}}$

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$$1. \quad \sqrt{-9} = \frac{\mathbf{3i}}{\sqrt{9} \cdot \sqrt{-1}}$$

$$2. \quad \sqrt{-64} = \frac{\mathbf{8i}}{\sqrt{64} \cdot \sqrt{-1}}$$

$$3. \quad \sqrt{-2} = \frac{\sqrt{2}}{\sqrt{2} \cdot \sqrt{-1}}$$

$$4. \quad \sqrt{-24} = \underline{\hspace{2cm}}$$

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

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Express each of the following as imaginary numbers in bi form. (Simplify any square roots.)

$$1. \quad \frac{\sqrt{-9}}{\sqrt{9} \cdot \sqrt{-1}} = \underline{3i}$$

$$2. \quad \frac{\sqrt{-64}}{\sqrt{64} \cdot \sqrt{-1}} = \underline{8i}$$

$$3. \quad \frac{\sqrt{-2}}{\sqrt{2} \cdot \sqrt{-1}} = \underline{\sqrt{2}}$$

$$4. \quad \sqrt{-24} = \underline{\hspace{2cm}}$$

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$$4. \quad \frac{\sqrt{-24}}{\sqrt{24} \cdot \sqrt{-1}} = \underline{\sqrt{4}}$$

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$$3. \quad \frac{\sqrt{-2}}{\sqrt{2} \cdot \sqrt{-1}} = \underline{\sqrt{2} i}$$

$$4. \quad \frac{\sqrt{-24}}{\sqrt{24} \cdot \sqrt{-1}} = \underline{\sqrt{4} \cdot \sqrt{6}}$$

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$$5. \quad \sqrt{-50} = \underline{\hspace{2cm}}$$

$$6. \quad \sqrt{-54} = \underline{\hspace{2cm}}$$

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$$5. \quad \frac{\sqrt{-50}}{\sqrt{50} \cdot \sqrt{-1}} = \underline{\hspace{2cm}}$$

$$6. \quad \frac{\sqrt{-54}}{\sqrt{54} \cdot \sqrt{-1}} = \underline{\hspace{2cm}}$$

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$$\sqrt{24} \cdot \sqrt{-1} = \sqrt{4} \cdot \sqrt{6} i$$

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$$\sqrt{50} \cdot \sqrt{-1} =$$

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Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

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Algebra II Class Worksheet #3 Unit 5

Express each of the following as imaginary numbers in bi form. (Simplify any square roots.)

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$$3. \quad \sqrt{-2} = \frac{\sqrt{2} i}{\sqrt{2} \cdot \sqrt{-1}}$$

$$4. \quad \sqrt{-24} = \frac{2\sqrt{6} i}{\sqrt{24} \cdot \sqrt{-1} = \sqrt{4} \cdot \sqrt{6} i}$$

$$5. \quad \sqrt{-50} = \frac{5\sqrt{2} i}{\sqrt{50} \cdot \sqrt{-1} = \sqrt{25} \cdot \sqrt{2} i}$$

$$6. \quad \sqrt{-54} = \frac{\sqrt{9} \cdot \sqrt{6} i}{\sqrt{54} \cdot \sqrt{-1} = \sqrt{9} \cdot \sqrt{6} i}$$

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following as imaginary numbers in bi form. (Simplify any square roots.)

$$1. \quad \sqrt{-9} = \frac{3i}{\sqrt{9} \cdot \sqrt{-1}}$$

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Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following as imaginary numbers in bi form. (Simplify any square roots.)

$$1. \quad \sqrt{-9} = \frac{\mathbf{3i}}{\sqrt{9} \cdot \sqrt{-1}}$$

$$2. \quad \sqrt{-64} = \frac{\mathbf{8i}}{\sqrt{64} \cdot \sqrt{-1}}$$

$$3. \quad \sqrt{-2} = \frac{\mathbf{\sqrt{2} i}}{\sqrt{2} \cdot \sqrt{-1}}$$

$$4. \quad \sqrt{-24} = \frac{\mathbf{2\sqrt{6} i}}{\sqrt{24} \cdot \sqrt{-1} = \sqrt{4} \cdot \sqrt{6} i}$$

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Algebra II Class Worksheet #3 Unit 5

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$$2. \quad \sqrt{-64} = \frac{8i}{\sqrt{64} \cdot \sqrt{-1}}$$

$$3. \quad \sqrt{-2} = \frac{\sqrt{2} i}{\sqrt{2} \cdot \sqrt{-1}}$$

$$4. \quad \sqrt{-24} = \frac{2\sqrt{6} i}{\sqrt{24} \cdot \sqrt{-1} = \sqrt{4} \cdot \sqrt{6} i}$$

$$5. \quad \sqrt{-50} = \frac{5\sqrt{2} i}{\sqrt{50} \cdot \sqrt{-1} = \sqrt{25} \cdot \sqrt{2} i}$$

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Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \frac{\sqrt{-72}}{\sqrt{72}} = \underline{\hspace{2cm}}$$

$$8. \sqrt[3]{-72} = \underline{\hspace{2cm}}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \quad \sqrt{-72} = \underline{\hspace{2cm}}$$
$$\sqrt{72} \cdot \sqrt{-1}$$

$$8. \quad \sqrt[3]{-72} = \underline{\hspace{2cm}}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

$\sqrt{72} \cdot \sqrt{-1} =$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} =$ _____

$\sqrt{72} \cdot \sqrt{-1} =$

8. $\sqrt[3]{-72} =$ _____

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

$\sqrt{72} \cdot \sqrt{-1} =$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36}$$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}$$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}$$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2} \cdot i$$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2} \cdot i$$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

7. $\sqrt{-72} = \underline{\hspace{2cm}}$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2} \cdot i$$

8. $\sqrt[3]{-72} = \underline{\hspace{2cm}}$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \quad \sqrt{-72} = \underline{6} \underline{\hspace{1cm}}$$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2} \cdot i$$

$$8. \quad \sqrt[3]{-72} = \underline{\hspace{1cm}}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \quad \sqrt{-72} = \underline{6\sqrt{2} i}$$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2} i$$

$$8. \quad \sqrt[3]{-72} = \underline{\hspace{2cm}}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \quad \sqrt{-72} = \underline{6\sqrt{2}i}$$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}i$$

$$8. \quad \sqrt[3]{-72} = \underline{\hspace{2cm}}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

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Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \quad \sqrt{-72} = \underline{6\sqrt{2}i}$$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}i$$

$$8. \quad \sqrt[3]{-72} = \underline{\hspace{2cm}}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

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Algebra II Class Worksheet #3 Unit 5

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$$7. \quad \sqrt{-72} = \underline{6\sqrt{2}i}$$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}i$$

$$8. \quad \sqrt[3]{-72} = \underline{\hspace{2cm}}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \quad \sqrt{-72} = \underline{6\sqrt{2}i}$$
$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}i$$

$$8. \quad \sqrt[3]{-72} = \underline{\hspace{2cm}}$$
$$\sqrt[3]{-8}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \quad \sqrt{-72} = \underline{6\sqrt{2}i}$$
$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}i$$

$$8. \quad \sqrt[3]{-72} = \underline{\hspace{2cm}}$$
$$\sqrt[3]{-8} \cdot \sqrt[3]{9}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \quad \sqrt{-72} = \underline{6\sqrt{2}i}$$
$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}i$$

$$8. \quad \sqrt[3]{-72} = \underline{-2}$$
$$\sqrt[3]{-8} \cdot \sqrt[3]{9}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$7. \quad \sqrt{-72} = \underline{6\sqrt{2}i}$$
$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}i$$

$$8. \quad \sqrt[3]{-72} = \underline{-2\sqrt[3]{9}}$$
$$\sqrt[3]{-8} \cdot \sqrt[3]{9}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

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Algebra II Class Worksheet #3 Unit 5

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$$8. \quad \sqrt[3]{-72} = \underline{-2\sqrt[3]{9}}$$
$$\sqrt[3]{-8} \cdot \sqrt[3]{9}$$

Simplifying the Square Root of Negative Numbers

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Algebra II Class Worksheet #3 Unit 5

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$$7. \quad \sqrt{-72} = \underline{6\sqrt{2}i}$$

$$\sqrt{72} \cdot \sqrt{-1} = \sqrt{36} \cdot \sqrt{2}i$$

$$8. \quad \sqrt[3]{-72} = \underline{-2\sqrt[3]{9}}$$

$$\sqrt[3]{-8} \cdot \sqrt[3]{9}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

9. $\sqrt{\frac{-4}{5}} =$

10. $\sqrt[3]{\frac{-7}{9}} =$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

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Simplifying the Square Root of Negative Numbers

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9. $\sqrt{\frac{-4}{5}} =$

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Simplifying the Square Root of Negative Numbers

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Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$9. \quad \sqrt{\frac{-4}{5}} =$$

$$= \sqrt{\frac{4}{5}}$$

$$10. \quad \sqrt[3]{\frac{-7}{9}} =$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$\begin{aligned} 9. \quad \sqrt{\frac{-4}{5}} &= \\ &= \sqrt{\frac{4}{5}} \cdot \sqrt{-1} \end{aligned}$$

$$10. \quad \sqrt[3]{\frac{-7}{9}} =$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

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Algebra II Class Worksheet #3 Unit 5

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$$10. \quad \sqrt[3]{\frac{-7}{9}} =$$

Simplifying the Square Root of Negative Numbers

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Algebra II Class Worksheet #3 Unit 5

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$$\begin{aligned} 9. \quad \sqrt{\frac{-4}{5}} &= \\ &= \sqrt{\frac{4}{5}} \cdot \sqrt{-1} = \end{aligned}$$

$$10. \quad \sqrt[3]{\frac{-7}{9}} =$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$9. \quad \sqrt{\frac{-4}{5}} =$$

$$= \sqrt{\frac{4}{5}} \cdot \sqrt{-1} =$$

$$10. \quad \sqrt[3]{\frac{-7}{9}} =$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$9. \quad \sqrt{\frac{-4}{5}} =$$

$$= \sqrt{\frac{4}{5}} \cdot \sqrt{-1} = \sqrt{\frac{20}{25}}$$

$$10. \quad \sqrt[3]{\frac{-7}{9}} =$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$9. \quad \sqrt{\frac{-4}{5}} =$$

$$= \sqrt{\frac{4}{5}} \cdot \sqrt{-1} = \sqrt{\frac{20}{25}}$$

$$10. \quad \sqrt[3]{\frac{-7}{9}} =$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

9. $\sqrt{\frac{-4}{5}} =$

$= \sqrt{\frac{4}{5}} \cdot \sqrt{-1} = \sqrt{\frac{20}{25}}$

10. $\sqrt[3]{\frac{-7}{9}} =$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$9. \quad \sqrt{\frac{-4}{5}} =$$

$$= \sqrt{\frac{4}{5}} \cdot \sqrt{-1} = \sqrt{\frac{20}{25}} i$$

$$10. \quad \sqrt[3]{\frac{-7}{9}} =$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

$$9. \quad \sqrt{\frac{-4}{5}} =$$

$$= \sqrt{\frac{4}{5}} \cdot \sqrt{-1} = \sqrt{\frac{20}{25}} i =$$

$$10. \quad \sqrt[3]{\frac{-7}{9}} =$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

Step 2: Express \sqrt{k} in simplest form and $\sqrt{-1} = i$.

Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

9. $\sqrt{\frac{-4}{5}} =$

$= \sqrt{\frac{4}{5}} \cdot \sqrt{-1} = \sqrt{\frac{20}{25}} i =$

$=$

10. $\sqrt[3]{\frac{-7}{9}} =$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

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Algebra II Class Worksheet #3 Unit 5

Express each of the following in simplest form.

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$$= \underline{\sqrt{20}}$$

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$$\begin{aligned} 10. \quad \sqrt[3]{\frac{-7}{9}} &= \\ &= \sqrt[3]{\frac{-21}{27}} = \frac{\sqrt[3]{-21}}{\sqrt[3]{27}} = \\ &= \frac{\sqrt[3]{-21}}{3} = \frac{\sqrt[3]{-1}}{3} \end{aligned}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

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Algebra II Class Worksheet #3 Unit 5

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$$\begin{aligned} 12. \quad \sqrt[3]{-1.5} &= \\ &= \sqrt[3]{-\frac{3}{2}} = \end{aligned}$$

Simplifying the Square Root of Negative Numbers

Step 1: Factor – Express the expression in the form $\sqrt{k} \cdot \sqrt{-1}$, where $k > 0$.

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Good luck on your homework !!

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