

Algebra II
Imaginary Numbers

15, 8, 13

⑮ $2x^2 - 16 = 0$
 $\frac{2x^2}{2} = \frac{16}{2}$
 $x^2 = 8$
 $\sqrt{x^2} = \sqrt{8}$
 $x = \pm 2\sqrt{2}$

⑬ $\frac{(x+3)^2}{2} = 2 \cdot 2$
 $\sqrt{(x+3)^2} = \sqrt{4}$
 $\frac{x+3}{2} = \pm 2 - 3$
 $x = -1, -5$

Nov 1-11:36 AM

Nov 3-9:31 AM

Bell Ringer

1. Billy's restaurant ordered 200 flowers for Mother's Day. The ordered carnations, C, at \$1.50 each, roses, R, at \$5.75 each, and daisies, D, at \$2.60 each. They ordered mostly carnations, and 20 fewer roses than daisies. The total order came to \$589.50. How many of each type of flower was ordered?

A) C+R+D=200	B) C+R+D=200
R=D-20	D=R-20
1.50C+5.75R+2.60D=589.50	1.50C+5.75R+2.60D=589.50
C) C+R+D=200	D) C+R+D=200
R=D-20	D=R-20
5.75C+1.50R+2.60D=589.50	5.75C+1.50R+2.60D=589.50

Can we take a square root of a negative number?

Well, today we are going to learn about a new concept.

$\sqrt{-4}$ Error

Nov 1-11:37 AM

Nov 1-11:53 AM

Let us look at... **Imaginary #5**

1. $\sqrt{-4}$ $2i$ 2. $\sqrt{-36}$ $6i$ 3. $-\sqrt{-49}$ $-7i$

4. $\sqrt{-48}$ $4i\sqrt{3}$ 5. $5\sqrt{-72}$ $30i\sqrt{2}$ 6. $\frac{-1}{3}\sqrt{-90}$ $= -i\sqrt{10}$ or $-i\sqrt{10}$

So i means $\sqrt{-1}$
 $\sqrt{-1} = i$

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We can also solve equations.

1. $x^2 + 49 = 0$
 $\sqrt{x^2} = \sqrt{-49}$
 $x = \pm 7i$

2. $5x^2 = -80$
 $\sqrt{x^2} = \sqrt{-16}$
 $x = \pm 4i$

3. $3x^2 + 75 = 0$
 $3x^2 = -75$
 $\sqrt{x^2} = \sqrt{-25}$ $x = \pm 5i$

4. $2x^2 + 32 = 0$ 5. $2(x-1)^2 = -80$
 $\sqrt{(x-1)^2} = \sqrt{-40}$
 $x-1 = \pm 2i\sqrt{10} + 1$
 $x = 2i\sqrt{10} + 1, -2i\sqrt{10} + 1$

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Simplify the following expressions. $i^2 = -1$

1. $\sqrt{-4}(\sqrt{-25} + \sqrt{27})$
 $2i(5i + 3\sqrt{3})$
 $10i^2 + 6i\sqrt{3}$
 $-10 + 6i\sqrt{3}$

2. $\sqrt{-2}(\sqrt{-8} - \sqrt{24})$
 $i\sqrt{2}(2i\sqrt{2} - 2\sqrt{6})$
 $2i^2\sqrt{4} - 2i\sqrt{12}$
 $2(-1)(2)$
 $-4 - 4i\sqrt{3}$

Nov 3-1:49 PM

We are going to find the complex conjugate.

1. $6i$ 2. $8+5i$ 3. $\frac{\sqrt{3}}{2} - 2i$

Nov 1-12:05 PM

Conclusion

1. Can you take the square root of a negative number?
2. Do you get a real number if you take the square root of a negative number?
3. How do you find the conjugate?
4. ?????s

Nov 1-12:09 PM

Assignment

Imaginary Number Worksheet

Nov 1-12:10 PM