

4-7: Roots & Zeros

Integrated Math III
November 6, 2019

Agenda

- 1 Grade yesterday's work
- 2 Question to ponder
- 3 Last night's notes
- 4 Question to ponder, revisited
- 5 Today's objective and work

Grade yesterday's work

Question to ponder

Last night's notes

Question to ponder, revisited

Today's objective and work

Yesterday's Work

Grade 4-6: 9-27, 45-53 & 59 (all odds).

Grade yesterday's work

Question to ponder

Last night's notes

Question to ponder, revisited

Today's objective and work

Challenge of the Day

Think about this while we review note work. We'll talk about it after:

Challenge of the Day

Think about this while we review note work. We'll talk about it after:

Come up with a quadratic polynomial with "nice" coefficients but "nasty" zeros.

If not ... Why not?

If so... Come up with an example.

Note Work Answers

1 $x = -2$ or 5 .

There are 2 real roots, both real.

3 $x = -\frac{3}{2}, \frac{3}{2}, \frac{3}{2}i,$ or $-\frac{3}{2}i$.

There are 4 roots: 2 real and 2 imaginary.

9 $x = -8, -2,$ or 1 .

11 $x = -4, 6, -4i,$ or $4i$.

13 $f(x) = x^3 - 9x^2 + 14x + 24$.

15 $f(x) = x^4 - 3x^2 - x^2 - 27x - 90$.

Challenge of the Day, Revisited

*Come up with a quadratic polynomial with
"nice" coefficients but "nasty" zeros.*

Challenge of the Day, Revisited

Come up with a quadratic polynomial with “nice” coefficients but “nasty” zeros.

- What do you notice?

Challenge of the Day, Revisited

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- What do you notice?
- How many zeros do these polynomials have?

Challenge of the Day, Revisited

Come up with a quadratic polynomial with "nice" coefficients but "nasty" zeros.

- What do you notice?
- How many zeros do these polynomials have?
- Is that what we expected? Why or why not?

Today's Objective and Work

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the Fundamental Theorem of Algebra and Complex
Conjugates Theorem.

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Use these new tools with the ones we already know to find roots and factors, solve problems, and generate new polynomials.

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Today's Classwork:

- 4-7: 17-25, 33-43, 47, 49 & 61-71 (all odds only)

End of Class

Today, we used the Fundamental Theorem and Complex Conjugates Theorem. Did you notice how these work together with the tools we'd already built (like factoring and synthetic substitution)? In tonight's notes and videos, we'll add a final tool to our polynomial toolbox.

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Today's Homework:

- Finish classwork.
- Watch 4-8 video lessons and tutorials.
 - Custom for you on Google Classroom.
- 4-8: 1-9 (odds only)