4-8: The Rational Zero Theorem

Mr. Sorice

Integrated Math III
November 7, 2019

Agenda

Respond to This

Come up with a response to the following claim. Think about while we grade yesterday's work. We'll talk about it after:

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> *Finding zeros of a polynomial is easy. Just plug in numbers until you get a 0, then repeat.*

Yesterday's Work

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

Respond to This, Revisited

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- What do you think?

Respond to This, Revisited

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- What do you think?
- How many numbers might you have to check?

Note Work Answers

1. $\boxed{\pm 1, \pm 2, \pm 3, \pm 4, \pm 6, \pm 8, \pm 12, \pm 24}$.
3. Block is $\boxed{5'' \times 9'' \times 28''}$. $(x = 5.)$
5. $\boxed{-\frac{3}{2}, -1}$.
7. $\boxed{-\frac{1}{2}, \frac{-5 - i\sqrt{23}}{8}, \frac{-5 + i\sqrt{23}}{8}}$.
9. $\boxed{-\frac{1}{2}, \frac{3}{2}, 1 - 2i, 1 + 2i}$.

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3. Block is $\boxed{5'' \times 9'' \times 28''}$. $(x = 5.)$
5. $\boxed{-\frac{3}{2}, -1}$. (Where are the other 2 zeros?!)
7. $\boxed{-\frac{1}{2}, \frac{-5 - i\sqrt{23}}{8}, \frac{-5 + i\sqrt{23}}{8}}$.
9. $\boxed{-\frac{1}{2}, \frac{3}{2}, 1 - 2i, 1 + 2i}$.

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We've added yet another tool to our polynomial toolbox: the Rational Zero Theorem. We now know all the polynomial tools we'll use!

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Today's Classwork:

- 4-8: 11-37 odds, 52-62 evens.

End of Class

Today, we added our last tool: the Rational Zero Theorem. It let us "work smarter" – only having to check certain values for zeros.
We've built powerful tools to deal with polynomials. We can graph, factor, and use synthetic evaluation. We know how many zeros there are, and where to look for them. These tools all work together to make each other (and you) even more powerful.

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Enjoy your long weekend – use time well (revise and study, at least some). When we next meet, we'll use our tools together in preparation for our test.