

GNAW

The Rule of Four

Graphically
Numerically
Algebraically
Words (Verbally)



FLAMINGO MATH

G.N.A.W. and the Rule of Four

What is GNAW and the Rule of Four?

The “Rule of Four” or G.N.A.W. Approach is a method of thinking about mathematics in order to make connections through multiple representations of our mathematical thinking. Students should be able to represent mathematics in graphic, numeric, algebraic, and verbal formats. G.N.A. W.

Why should you use the GNAW approach?

By implementing this process into your classes, student will gain a deeper understanding of the mathematics. The Rule of Four helps students connect and validate concepts and techniques.

How can you use the Rule of Four?

Teachers can model this approach during instructional time to set the “tone” for expected thinking and reasoning. Then, give your students many chances to practice the techniques. It is also important that students learn to make connections between the different representations.

What next?

In the attached pages, you can create a year long attitude of exploring concepts using the G.N.A.W. method. Simply give students a place to begin and add a set of instructions for each of the other two or three representations. You have the options of a Rule of Three on half sheets of paper or a Rule of Four on a full sheet of paper.

For example, you want students to understand and investigate parabolic behavior.

Graphical: Begin with the function $y = x^2 - x - 12$

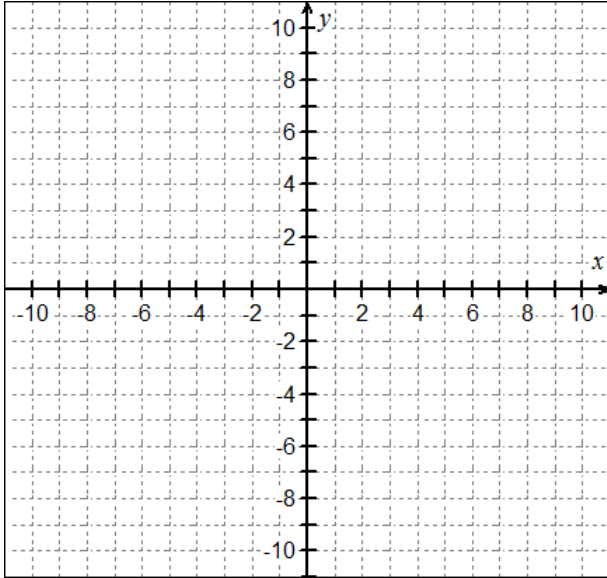
Numerical: Give a set of x-values to find y-values that include both x-intercepts and y-intercepts

Algebraic: Students will factor and solve the function

Verbally: Have students describe key features of the function such as domain, range, vertex, intercepts.

G.N.A.W.

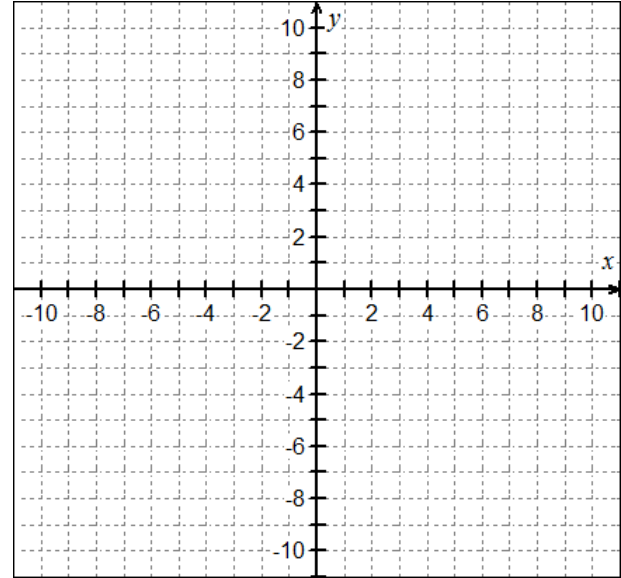
Name: _____



© 2016 Flamingo Math™ (Jean Adams)

G.N.A.W.

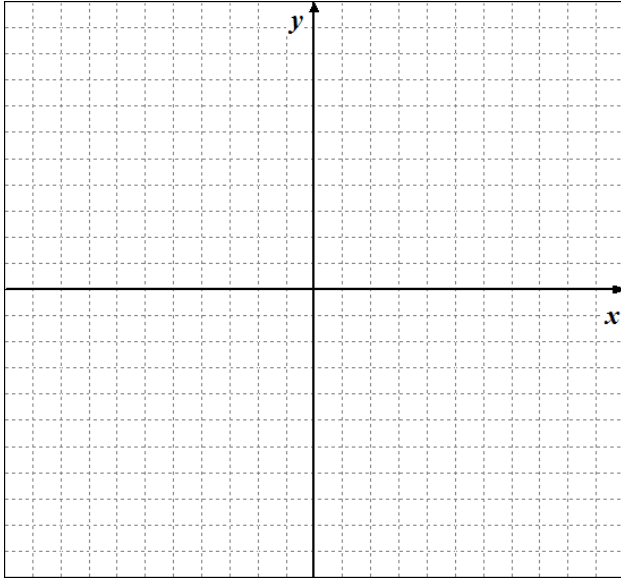
Name: _____



© 2016 Flamingo Math™ (Jean Adams)

G.N.A.W.

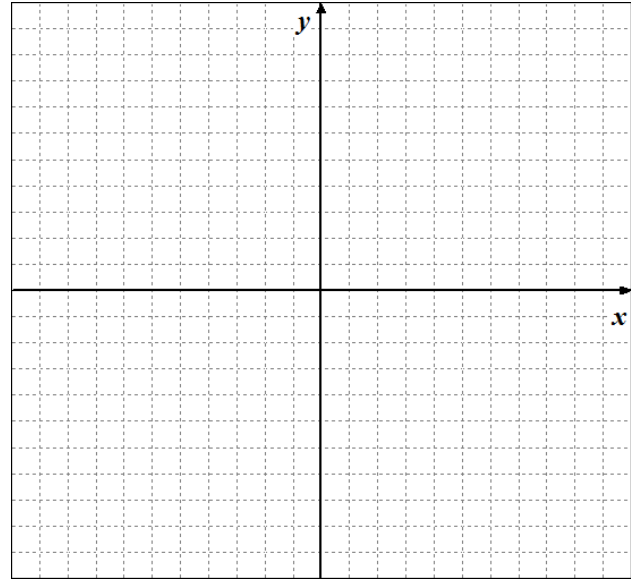
Name:



© 2016 Flamingo Math™ (Jean Adams)

G.N.A.W.

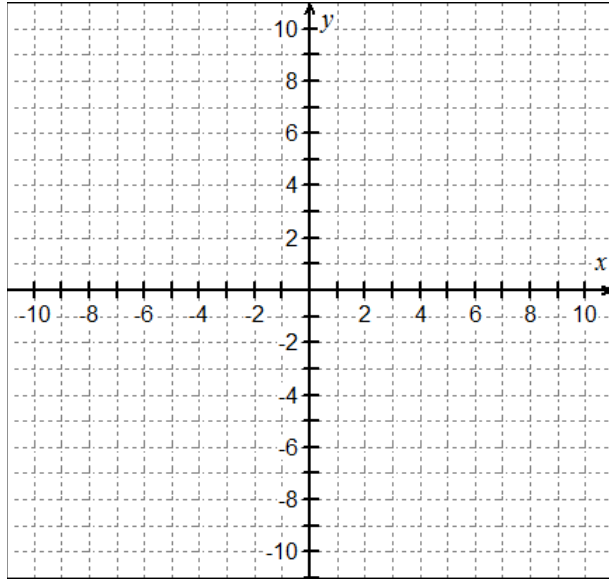
Name:



© 2016 Flamingo Math™ (Jean Adams)

Name: _____

Graphical:



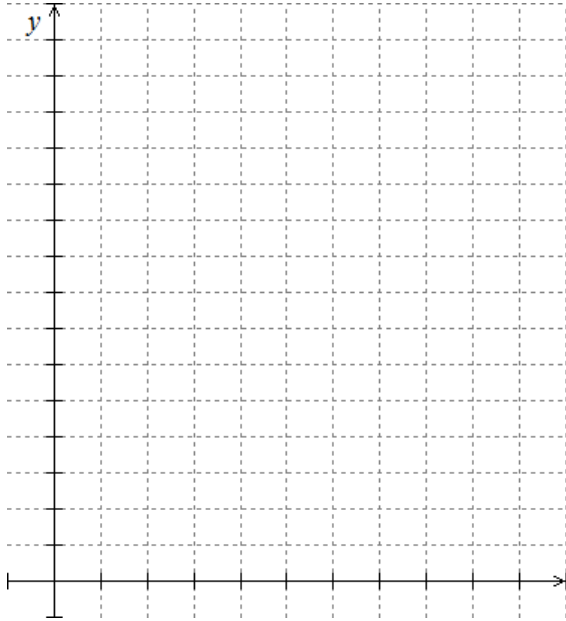
Algebraic:

Numerical:

Verbal:

Name: _____

Graphical:

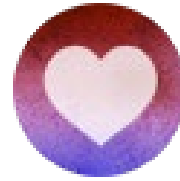


Algebraic:

Numerical:

Verbal:

Let's Connect . . .



I have a passion and drive to create rigorous, engaging lessons of the highest quality for teachers and students. My products include guided notes, [Foldables](#),[©] SMART Board[©] Lessons, games, activities, homework, assessments, and so much more. My resources are focused on three courses for your honors students.

[Algebra 2](#), [Pre-Calculus](#), and [Calculus](#).



Earn credit toward future purchases:

Go to your **My Purchases** page on Teachers Pay Teachers. Look for the **Provide Feedback** button beside each purchase. Click it and you will be taken to a page where you can leave a short comment and a rating for the product. I truly value your feedback and insight. It helps me create new products and improve on existing items to meet your needs and help students succeed.

Thanks, I appreciate your support!



FLAMINGO MATH

Terms of Use

© 2012-2018 Jean Adams – Flamingo Math, LLC

All rights reserved. This product is for your **personal classroom use only** and is not transferrable. This license is not intended for use by organizations or multiple users, including but not limited to schools, multiple teachers within a grade level, or school districts. If you would like to share this product with your colleagues or department, please purchase additional licenses from my store at a discounted price.

Copying any part of this publication and posting the product on the Internet in any form, including classroom and/or personal websites, social media, or network drives is strictly prohibited. Violations are subject to penalties of the Digital Millennium Copyright Act (DMCA).

Thank you for protecting my work!



A special thanks to these gifted artists:

