

Mahoning Valley Mathematics Forum Miscellaneous Information

AMC – American Mathematics Contests FREE Student help sessions at YSU

Saturdays: January 11, 18, 25, February 1, 8 10:00 to 11:30 AM

Cushwa Hall Room 1107

All interested high school students are invited

For more information contact: Jamal Tartir Tartir@math.ysu.edu 330 941-1812

American Math Contests REGISTRATION

It is cheaper if you register by December 15.

To register and for more information: www.math.unl.edu/~amc/registration

Pi Mu Epsilon Math Conference at YSU

Open to interested high school math students

There will be about 40 YSU math student talks

FREE Saturday, February 22, 2003 10:00 AM to 3:00 PM Cushwa Atrium

Send e-mail addresses of interested students to Doug Faires at Faires@math.ysu.edu

Teachers Teaching with Technology (T3) Regional Conference

Friday afternoon (1:00 to 4:00) and Saturday (8:00AM to 3:30 PM): February 14 and 15, 2003

Columbus State Community College

Consider applying to give a talk and get in for FREE!

For more information: <http://education.ti.com/us/t3/conferences/regional/columbus03.html>

Teachers Teaching with Technology (T3) International Conference

March 7 – 9, 2003 Nashville

<http://education.ti.com/us/t3/conferences/international/confoverview03.html>

NCTM National Conference

April 9 – 12, 2003 San Antonio

<http://www.nctm.org/meetings/sanantonio/>

Hint: check out the Program Sampler – especially the technology section ☺

Mahoning Valley Mathematics mini Forum for AP Calculus

Tentatively scheduled for Thursday, January 23, 2003, 4:00 – 5:30 PM

ANY interested high school calculus or AP Calculus teacher is invited. Please contact me to let me know if you may be interested. I also need help getting names and e-mail addresses of current AP Calculus teachers so we can get their input. Thanks for your help.

Scheduled participants include John Hoopes of Canfield High School and Tom Smotzer of YSU. John has been teaching AP Calculus for many years and is a former grader of the AP exam. Tom teaches Calculus at YSU and is a current grader of the AP exam.

Need a 3rd year math class for students who passed Algebra 1 and Geometry but just can't take the rigor of Algebra 2?

Consider a course called Intermediate Algebra & Geometry. It is designed for those students. It is supposed to enhance the algebra and geometry skills so that the student has a better chance to pass Algebra 2 in high school or college. It addresses the topics on the OGT. It is a worthwhile course that satisfies the 3rd (and sometimes final) year of high school mathematics. See me if you are interested in this. It is being used here at Fitch and in two schools in Washington (state).

WANT YOUR OWN WEB ADDRESS? Cost: \$6 to \$8 per year. Godaddy.com

O.G.T. Update

The draft "blueprint" for the test is 36 multiple-choice items, 5 short-answer items (one per standard for number, number sense and operations, measurement; geometry and spatial sense; patterns, functions and algebra; and data analysis and probability) and 2 extended-response items. Note: the assessment of mathematical processes benchmarks will be incorporated into the items written for the content-related benchmarks, particularly in the short-answer and extended-response formats.

An OGT sampler is scheduled to be posted on the assessment center component of the ODE web site on November 30. That address is <http://www.ode.state.oh.us/proficiency/>.

You may wish to monitor that site from time to time for additional updates.

People to contact from the Ohio Department of Education:
Mathematics Team - Ohio Department of Education

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Anita Jones anita.jones@ode.state.oh.us (614) 387-2274

Forward questions related to test administration to Tom Bulgrin or Don Peasley.

Forward questions related to content to Dan Badea or Anne Mikesell.

Forward questions related to the assessment program / development process to Tom Bulgrin or Don Peasley Donald.Peasley@ode.state.oh.us (614) 387-2184

Ohio Legislators

Rep. Ken Carano

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Former Fitch teacher

Rep. James Callender

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Senator Robert Hagan

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Senator Robert Gardner

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Chair of education committee
Former educator

To find out how to contact your state senator: <http://www.senate.state.oh.us>

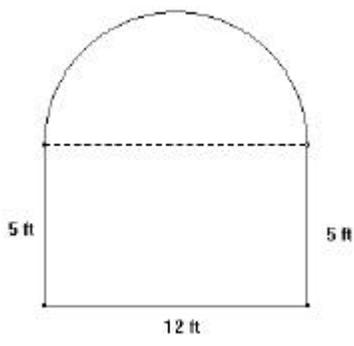
To find out how to contact your state representative: <http://www.house.state.oh.us>

Respectfully submitted,

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www.FitchMath.us

- The ratio of boys to girls in the 8th grade is 3 to 2. One-half of the boys and one-third of the girls are in the pep club. If there are 60 girls in the pep club, how many boys are in the pep club?
- A regular hexagon is cut into 4 congruent pieces. What type of quadrilateral could describe the shape of each piece?
- A board's strength (S) varies directly with the product of the length (L) and the cube of the depth (D) of a board and inversely with the square of the board's width (W). Write an equation that describes S .
- Joe wishes to put a fence around his garden shown below. What is the length of the fence needed, rounded to the nearest foot?



- Draw a graph that represents the relationship of the length of a side of a square, x , to its perimeter, y . (alternative question: or to its area, y)
- A boat travels for 20 minutes at 30 miles per hour, then for 35 minutes at 40 miles per hour, and then 45 minutes at 60 miles per hour.
 - Find the total distance traveled.
 - If the boat would have traveled at 50 miles per hour for the entire trip, how much less time would it take to travel the distance found in part a.
- For the school prom, the local hotel will charge \$200 for the ballroom plus \$15.75 per student. The prom committee has to spend at least \$1000 at the hotel but can spend no more than \$3000 because that is all that the junior class has in its budget. Write an inequality that can be used to find all the possible values for x , the number of students that can attend the prom. Find the minimum and maximum number of students that may attend and write a few sentences to support your answers.
- The graph of a polynomial function, $y = f(x)$ is given. State all of the zeros of f .
- The annual salaries of the 20 employees of a company is given. The president makes \$100,000. There are 2 vice presidents who each make \$75,000. Three secretaries who each make \$25,000. The laborers make: 7 make \$30,000 each; 4 make \$28,000 each; and 3 make \$22,000 each. (this information is supplied in a list showing EACH employee) Find the mean, median, and mode of the salaries. Which of these most accurately describes the company's average annual salary and give a written explanation of your choice.
- How many different ways can 6 books be arranged on a shelf?
- A telephone pole that is 80 feet tall is hit by lightning at a height 20 feet from the ground and falls towards a house. The top of the pole just barely misses the house.
 - To the nearest tenth of a foot, how far is the house from the base of the pole.
 - What is the measure of the angle formed by fallen part of the pole and the ground (to the nearest tenth of a degree)?

12. Sam bought a rare quarter for \$6.00 three years ago. Today it is valued at \$17.50. His best friend, Matt, bought a rare quarter for \$13.00 three years ago. Today it has a value of \$31.00. Sam says that his quarter has increased more in value than Matt's coin has. Matt argues that his quarter has increased more in value than Sam's coin has. Explain how both Sam and Matt can be correct. Support your answer by providing an appropriate explanation showing your work.

13. Germ populations can grow at a very fast rate. A given culture contains about 2000 germs at noon. If the number of germs triples each half hour, about how many germs will the culture contain five hours later? Express your answer in scientific notation using two significant digits.

14. Arrange in order from largest to smallest: -1.6 , $-\sqrt{3}$, $\frac{8}{3}$, $\sqrt{7}$

15. In 1990, Mr. Rich had \$5000 invested in stocks. Since then, his investment has increased by 180%. How much does Mr. Rich have invested today?

16. The Rydell High School Ravens basketball team scored 82 points at their last game. The team made 34 baskets altogether. A basket was either worth 3 points or 2 points (no foul shots were made). Determine how many of each type of basket was made. Support your answer by providing an appropriate explanation showing your work.

17. Splint phone company charges \$5 per month and 12 cents per minute for their long distance service. AP&P has no monthly fee but charges 15 cents per minute for long distance. Determine for what amount of minutes it is less expensive to use Splint and when it is less expensive to use AP&P. Support your answer by providing an appropriate explanation showing your work.

18. At the post office, the cost of sending a package is \$0.89 for any package weighing up to 3 ounces. For every ounce over 3 ounces, you must also pay an additional \$0.40. Using p to represent the weight of the package in ounces, write an expression that can be used to calculate the total cost of sending a package that weighs more than 3 ounces.

19. Write the equations of two lines whose graphs are perpendicular to each other.

20. A yard stick makes a shadow that is 26 inches long. At the same time of day, a flagpole makes a shadow that is 20 feet long. To the nearest foot, what is the height of the flagpole?

21. Triangle ABC has vertices: A (2, -3) B (5, 4) C (8, -1)
On graph paper, draw triangle A'B'C' by translating each vertex of triangle ABC four units to the right and five units down. Label the triangle as A'B'C'.
Then draw triangle A''B''C'' by translating each vertex of triangle A'B'C' one unit to the left and two units up. Label the triangle as A''B''C''.
Describe the movements necessary to perform a single transformation of each vertex of triangle ABC to make triangle A''B''C''.

22. Mabel uses OnLineAntarctica (OLA) for her internet provider. Blaise uses MakesNoSense (MNS) for his internet provider. OLA has screen names that must have 3 letters followed by 4 single digit numbers and OLA allows for repetition of either numbers and or letters. MNS has screen names that must have 4 letters followed by 3 single digit numbers and MNS will not allow repetition of letters or numbers. Which internet provider allows for more screen names and by how many? Support your answer by providing an appropriate explanation showing your work.

23. The two bedrooms of a house are to have new carpeting. The dimensions of the rooms are 10' by 12' and 15' by 18'. To the nearest square yard, how many square yards of carpeting are needed to carpet the two rooms?