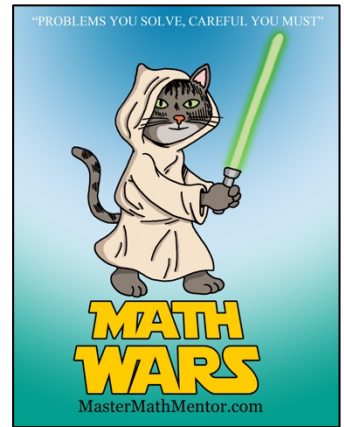


Math Wars – SAT/ACT

Topic 515 – Interpretation of Graphs

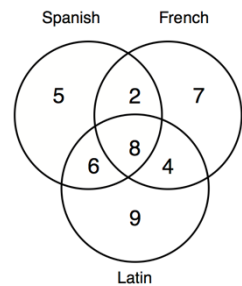


Maximum Time: 7 Minutes

Directions: To start, you need to download the Math Wars application on your cell phone: Use the QR code or the url: <https://mastermathmentor.com/mmm/mathwars.ashx?key=515>

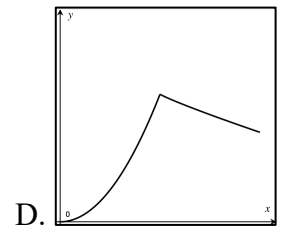
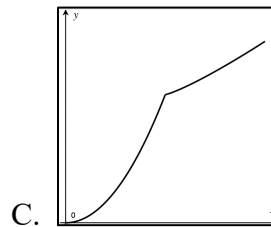
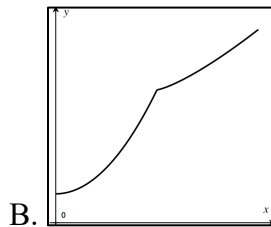
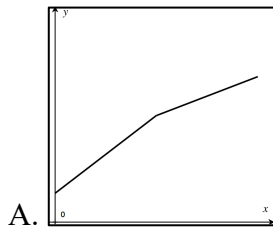
When ready, start the timer and then solve the problems below, entering your choice, A, B, C, D and pressing for each problem when you are sure of your answer. When complete, stop the timer. You will see problems you got correct in green and incorrect in red. You will receive a score based on how many problems you got right and your time. A perfect score is all problems correct using half the maximum time or less. You can text or email your friends with your results.

1. (1 pt) Using the Venn diagram to the right, how many students take at least 2 of the subjects?

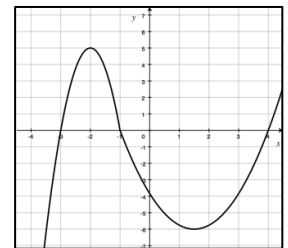


- A. 8
B. 12
C. 19
D. 20

2. (3 pts) A philanthropist donates a large sum to a charity. The money is put into a trust that receives compound interest. The money triples over a period of years and then doubles over the same period of years. Which of the following graphs illustrates the amount of money in the charity over the entire period of time?



3. (5 pts) Shown in the figure to the right is the graph of $y = f(x)$. Consider the graph of $f(x) + c$. Which interval must c belong to such that $f(x) + c$ has exactly 3 unique roots.

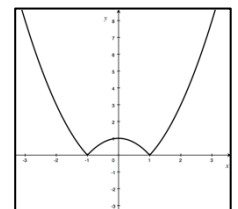


- A. $-6 < c < 5$
B. $-6 \leq c \leq 5$
C. $-5 < c < 6$
D. $-5 \leq c \leq 6$

4. (7 pts) Which of the following equations represents the graph to the right?

I. $f(x) = |-x^2 - 1|$ II. $f(x) = -|1 - x^2|$ III. $f(x) = -|-x^2 + 1|$

- A. I and II
B. I and III
C. II and III
D. I, II and III



5. (9 pts) The function $y = f(x)$ is graphed in the figure top the right. Which of the following equations could be $f(x)$?

A. $f(x) = x(x^2 - x + 6)(x^2 - 16)$

B. $f(x) = -x(x^2 - x + 6)(x^2 - 16)$

C. $f(x) = -x(x^2 + x - 6)(x^2 - 8x + 16)$

D. $f(x) = x(x^2 + x - 6)(x^2 - 8x + 16)$

