

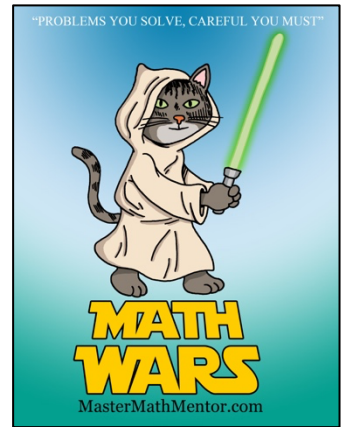
Math Wars – SAT/ACT

Topic 508 – Linear/Quadratic Systems



Maximum Time: 7.75 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=508>



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 pts) Given the following system of equations, determine the maximum number of points of intersections.

$$y = ax^2 \text{ and } y = bx^2, a \neq b.$$

A. 0

B. 1

C. 2

D. 3

2. (3 pts) The following system of equations has a point of intersection (x, y) . Find the value of y .

$$2x + y = 3 \text{ and } 3x - y = 7.$$

A. 2

B. -1

C. 10

D. 1

3. (5 pts) The following pair of simultaneous equations has no solution. Find the ratio of $b:a$.

$$2x - \frac{1}{3}y = 5$$
$$ax + by = 7$$

A. 6

B. -6

C. $\frac{1}{6}$

D. $-\frac{1}{6}$

4. (7 pts) Find the slope of the line connecting the points of intersection of the system $y = x^2 + 1$ and $y = 3x + 11$.

A. -3

B. 3

C. $\frac{1}{3}$

D. $-\frac{1}{3}$

5. (9 pts) A novelty truck owner only sells soft drinks and soft pretzels. He purchases his soft drinks at \$0.25 and pretzels at \$0.60. The revenue from a total sale of 150 items is \$210. He sells the soft drinks for \$1 and the pretzels for \$2. What is his profit?

A. \$58.50

B. \$69

C. \$151.50

D. \$268.50