

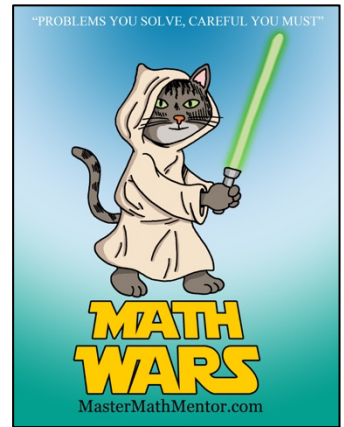
Math Wars – SAT/ACT

Topic 511 – Complex Numbers



Maximum Time: 7.5 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=511>



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) Simplify the expression $2i - 3 + 4i^2 - i^3$

A. $i + 1$

B. $2i - 8$

C. $3i + 1$

D. $3i - 7$

2. (3 pts) If $2i(3 - 2i)(1 + i)$ is expressed as $a + bi$, what is a ?

A. 8

B. 10

C. 2

D. -2

3. (5 pts) Which of the following is equivalent to $-64i$?

I. $(4i)^3$

II. $(2i\sqrt{2})^4$

III. $-64i^{67}$

A. I and II

B. I and III

C. II and III

D. I, II and III

4. (7 pts) Simplify: $\frac{8 - 2i}{4 + \sqrt{-4}}$

A. $\frac{7 - 6i}{5}$

B. $\frac{15 - 12i}{10}$

C. $16 + 4i$

D. does not exist

5. (9 pts) If $y = 2x^2 - 3x + 9$, find the sum of the roots.

A. 0

B. $\frac{6i\sqrt{7}}{4}$

C. $\frac{3}{2}$

D. $\frac{3i}{2}$