

Complex Numbers Bingo

SPI 3103.2.2 Compute with all real and complex numbers.

Checks for Understanding

- 3103.2.3 Identify and apply properties of complex numbers (including simplification and standard form).
- 3103.2.4 Add and subtract complex numbers.
- 3103.2.5 Multiply complex numbers.
- 3103.2.6 Define and utilize the complex conjugates to write the quotient of two complex numbers in standard form.

Directions

Students are given a blank Bingo card with 26 answers (in a random order) listed below the card. Using an ink pen (I use red to make it harder to change answers, etc.), students choose 16 of the answers to fill in the squares on their card. Before beginning the game, check students' cards to make sure they are filled in and that their answers are in ink. Tell students which type of Bingo the class will be playing (blackout, four corners, one straight line, etc.). After the students have completed their cards, begin playing the game by displaying one of the problems on the overhead or computer or writing it on the board. Students work the problem and check to see if the answer is on their Bingo card. If the answer is on their card, they write the letter of the problem in the box with the correct answer. Some students also choose to highlight or use some type of mark to indicate the square is covered. Highlighting seems to work best. I choose not to give out markers to cover correct answers, but that would work well if students do not have highlighters. Continue displaying the problems one at a time until someone wins. While the game is being played, students use a pencil rather than the pen used to fill in their Bingo card. If the concept is one in which more than one step is required, I have students neatly show work on a separate sheet of paper.

The Bingo card and problems on the following pages are for playing Bingo using the concept of complex numbers. The included answer sheet makes it easy to check the winning card. This game can be adapted for nearly any concept at any grade level. When making questions to use for Bingo, make sure all of your answers are unique. You can also alter the size of the Bingo card depending on the concept and the amount of time you have to play. I sometimes let students play as partners or groups. Students typically like this game, and they usually want to continue playing even after someone has won.

Complex Numbers Bingo

$21 - 21i$

$11i$

$1 - 19i$

$-26 - 101i$

$-8 + 2i$

$72 + 17i$

$-2 + i$

$46 + 12i$

$\frac{23-7i}{17}$

$58+9i\sqrt{2}$

$46 + 9i$

$\frac{1+31i}{74}$

$34 - 27i$

$13 - 2i$

$119 - 2i$

$-1 + 43i$

$11 - 4i$

$21 - 12i$

$\frac{22+25i\sqrt{2}}{34}$

$\frac{-6-32i\sqrt{3}}{111}$

$26 + i$

$-4 - 8i$

$\frac{87-19i}{122}$

$-47 + 14i$

$-4 + i$

$\frac{57-27i}{34}$

Problems for Complex Numbers Bingo

A. $(5 + 3i) - (7 + 2i)$

N. $(7 - i) + (6 - i)$

B. $(7 + 4i)(2 - 5i)$

O. $(4 + 3i)(5 + 7i)$

C. $\frac{3+2i}{5-7i}$

P. $\frac{5-3i}{4-i}$

D. $(7 - 9i) + (14 - 3i)$

Q. $(11 - 2i) - (15 + 6i)$

E. $(3 + i)(15 - i)$

R. $(3+4i\sqrt{2})(6-5i\sqrt{2})$

F. $(4 - 19i) - (12 - 21i)$

S. $(4 - 6i) - (10 + 11i) + (7 - 2i)$

G. $(10 - 7i)(3 - 8i)$

T. $(7 - 27i) + (14 + 6i)$

H. $\frac{9+6i}{3+5i}$

U. $\frac{8-i}{11+i}$

I. $(99 + 13i) + (20 - 15i)$

V. $(3 - i) - (7 - 2i)$

J. $(23 + 5i) - (70 - 9i)$

W. $(12 - 5i)(3 + 2i)$

K. $(7 + 2i) + (16 - 5i) + (3 + 4i)$

X. $(9 - 3i) + (2 - i)$

L. $\frac{4-2i\sqrt{3}}{6+5i\sqrt{3}}$

Y. $\frac{7+i\sqrt{2}}{4-3i\sqrt{2}}$

M. $(45 + 2i) + (27 + 15i)$

Z. $(10 + 8i) - (10 - 3i)$

Answers for Complex Numbers Bingo

A. $-2 + i$

N. $13 - 2i$

B. $34 - 27i$

O. $-1 + 43i$

C. $\frac{1+31i}{74}$

P. $\frac{23-7i}{17}$

D. $21 - 12i$

Q. $-4 - 8i$

E. $46 + 12i$

R. $58 + 9i\sqrt{2}$

F. $-8 + 2i$

S. $1 - 19i$

G. $-26 - 101i$

T. $21 - 21i$

H. $\frac{57-27i}{34}$

U. $\frac{87-19i}{122}$

I. $119 - 2i$

V. $-4 + i$

J. $-47 + 14i$

W. $46 + 9i$

K. $26 + i$

X. $11 - 4i$

L. $\frac{-6-32i\sqrt{3}}{111}$

Y. $\frac{22+25i\sqrt{2}}{34}$

M. $72 + 17i$

Z. $11i$