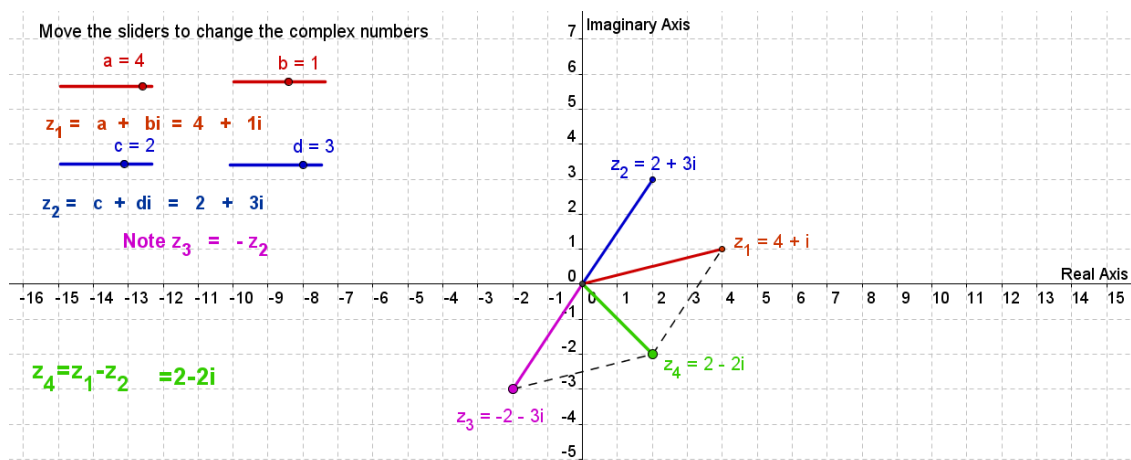


## Student Activity: To investigate subtraction of complex numbers

Use in connection with the interactive file, 'Subtraction of complex numbers', on the Student's CD.



- Calculate  $z_1 - z_2$  in each of the following cases and check your answer using the interactive file 'Subtraction of Complex numbers'.

	$z_1 - z_2$
a. $z_1 = 3 + 2i$ and $z_2 = 1 + 4i$	
b. $z_1 = 2 + 4i$ and $z_2 = 1 - 3i$	
c. $z_1 = 2 + 4i$ and $z_2 = -1 - 2i$	
d. $z_1 = -3 + 4i$ and $z_2 = 1 - 2i$	
e. $z_1 = -1 - 3i$ and $z_2 = -2 - 1i$	
f. $z_1 = i$ and $z_2 = 2 + i$	
g. $z_1 = i$ and $z_2 = i$	
h. $z_1 = i$ and $z_2 = -i$	
i. $z_1 = 1$ and $z_2 = -1$	
j. $z_1 = 1$ and $z_2 = -i$	
k. $z_1 = -1 - i$ and $z_2 = -2 - i$	

l.	$z_1 = -1 - i$ and $z_2 = -2 - i$	
m.	$z_1 = 1 + i$ and $z_2 = -2 - 2i$	
n.	$z_1 = 1 + \sqrt{25}i$ and $z_2 = -2\sqrt{9}i$	

2. If the complex number  $z = a + bi$ , what is  $-z$ ?

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3. How does the complex number  $-z$  differ from the complex number  $z$ ?

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4. What complex number gives  $0 + 0i$  when subtracted from  $2 + 3i$ ?

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5.

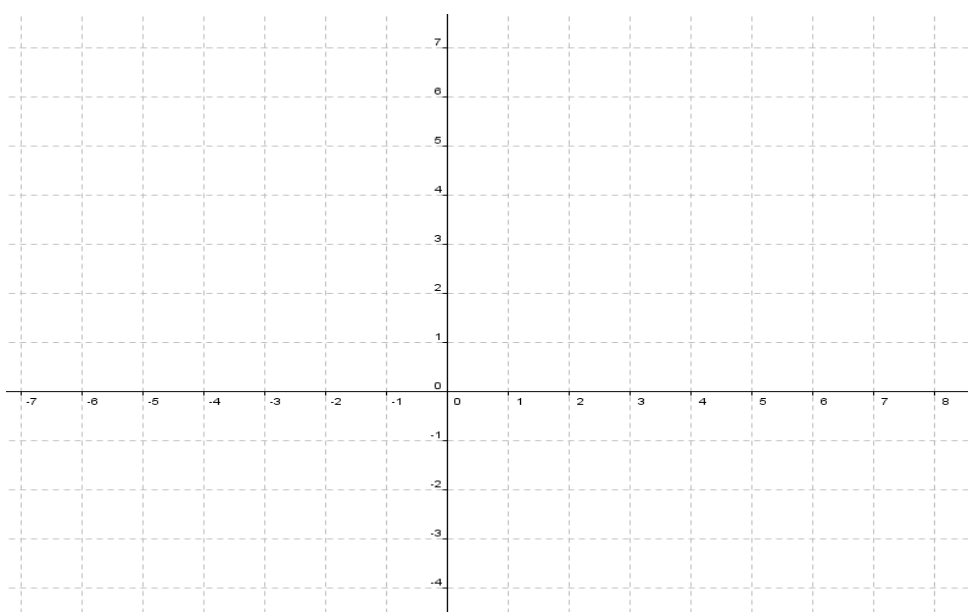
a. Plot the following complex numbers in the Argand Diagram.

i.  $2 + 2i$

ii.  $2 - 2i$

iii.  $3 + 2i$

iv.  $-2 + 3i$



- b. Subtract  $2+3i$  from each of the complex numbers in section a. of this question.

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- c. Draw a directed line (a line with an arrow indicating direction) between each complex number and its corresponding number with  $2+3i$  subtracted from it. What do you notice?

6. Is  $z_1 - z_2$  always the same as  $z_2 - z_1$ ? Explain your answer.

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