

Teaching & Learning Plans  
Complex Number Operations

Leaving Certificate Syllabus



---



**Uimhreacha Coimpléascacha: Plean Teagaisc  
& Foghlama**

## Section A, Student Activity 6

What do I know and what do I need to learn? Put a tic in the box against the statement that describes what you CAN do.

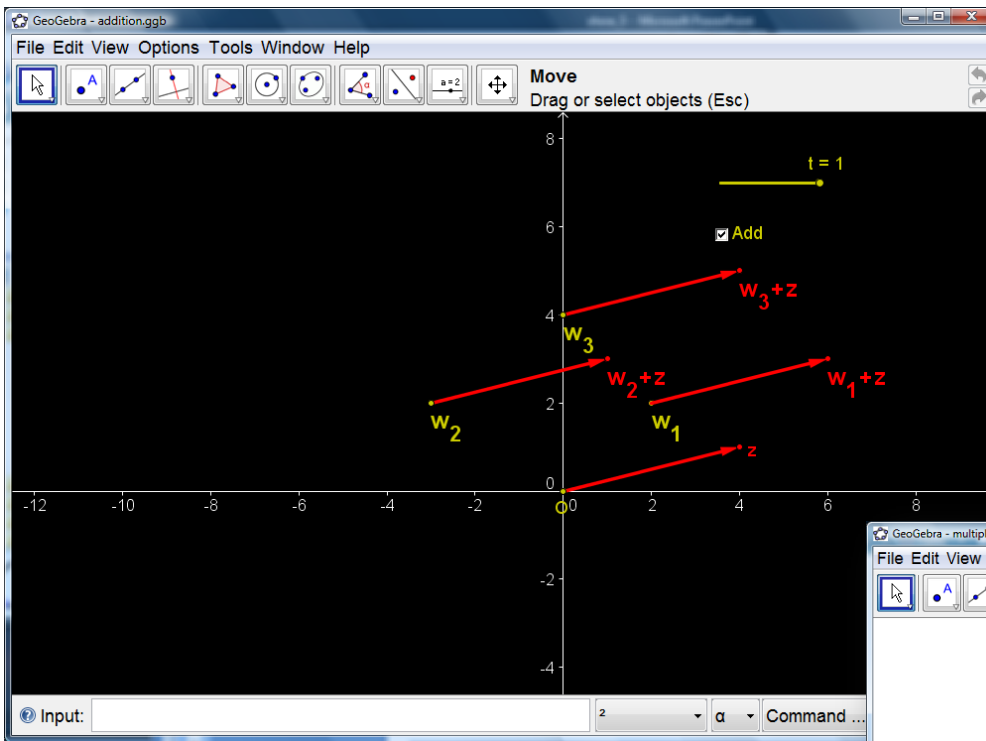
	Yes	Uncertain	No
<b>Knowledge</b>			
I know the number systems N,Z,Q,R and can perform the operations of +, -, ×, ÷			
I can square numbers			
I can find the square root of numbers			
I know the rules of indices			
I know the rules governing surds (irrational numbers)			
I can add and subtract like terms			
I can multiply and simplify algebraic expressions with two terms			
I can measure with a ruler			
I can use a protractor			
I understand what happens when a positive whole number is multiplied by (i) a number > 1 and (ii) a number between 0 and 1			
I know how to solve linear equations			
I know how to solve quadratic equations			
I know the two components of a Complex Number			
<b>Number</b>			
I know what i means			
I understand if i is raised to any power the result will be an element of the set {-1, 1, i, -i}			
I know what letters are used to denote Complex Numbers			
I know how to visually represent Complex Numbers			
I know what a translation is			
I know the definition of an angle (Rotation)			
I know what an axial symmetry is			
I know the modulus of a Complex Number			
I can calculate the modulus of a Complex Number			

# Complex Number Operations

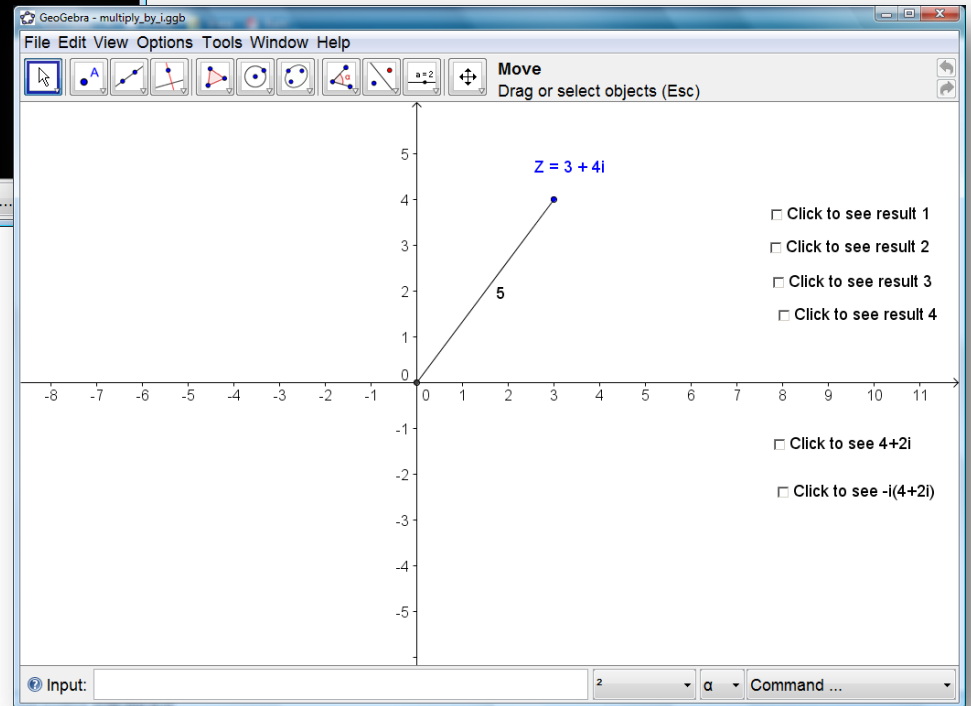
The Addition of Complex Numbers	The Subtraction of Complex Numbers	The Multiplication of Complex Numbers	The Division of Complex Numbers
<p>Add the real parts <sup>add</sup> and the imaginary parts.</p>	<p><u>Re - Re</u> and <u>Im - Im</u>  <del>BRACKETS</del> </p>	$(a+ib)(c+id)$ $= (ac-bd) + i(ad+bc)$	
<p>Example 1:</p> $\overset{\text{Re}}{(12+4i)} + \overset{\text{Re}}{\overset{\text{Im}}{(7+2i)}}$ $\Rightarrow \overset{\text{Re}}{19} + \overset{\text{Im}}{6i}$	<p>Example 1:</p> $2+4i - (1+2i)$ $\underline{1+2i}$	<p>Example 1:</p> $z_1 = 7-6i$ $z_2 = 5-2i$ $z_1 \cdot z_2 = (7-6i)(5-2i)$ $= 23-44i$	<p>Example 1:</p>
<p>Example 2:</p> $\overset{\text{Re}}{(7-2i)} + \overset{\text{Re}}{\overset{\text{Im}}{(9-4i)}}$ $\Rightarrow \overset{\text{Re}}{16} - \overset{\text{Im}}{6i}$	<p>Example 2:</p> $3-8i - (2-4i)$ <del>1-4i</del> ops! <u>1-4i</u> 	<p>Example 2:</p> $w = 4+3i$ $w^2 = (4+3i)^2$ $= (4+3i)(4+3i)$ $= 7+24i$	<p>Example 2:</p>



- Grúpaí de Ghníomhaíochtaí 2 – 2
- 1 Scoláire – 1 Ghníomhaíocht
- Fág an grúpa – cleachtadh beirte
- Fill agus roinn



addition.ggb



multiply\_by\_i.ggb

## Trodáin Céimgéabracha



