

# Chapter 3 / Example 14

## Operations with complex numbers

Storing values of complex numbers for ease of calculation.

Given the complex numbers  $z_1 = 1 - 3i$ ,  $z_2 = 4 + i$  and  $z_3 = -2 + 3i$ , find the following.

**a**  $z_1 \cdot z_2 - z_3$       **b**  $z_1 \cdot z_2 \cdot z_3$       **c**  $z_1^2 + 2z_2 \cdot z_3$

Check your answers on your GDC.

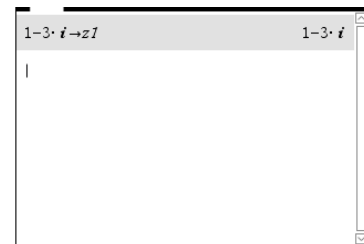
Open a new document and add a Calculator page.

To store a value press **ctrl** **var** (**sto**).

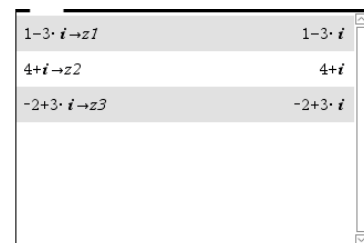
Type  $1 - 3i$  and store it as  $z_1$ .

To enter  $i$  press **π** and select  $i$  from the menu.

Press **enter**.

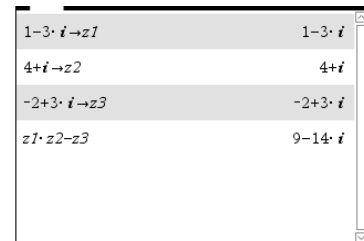


In the same way, store  $4 + i$  as  $z_2$  and  $-2 + 3i$  as  $z_3$ .



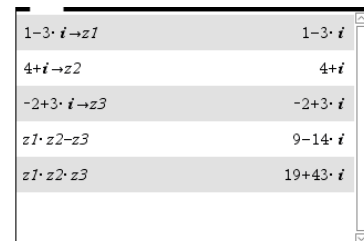
To calculate  $z_1 \cdot z_2 - z_3$  type  $z1 \times z2 - z3$  and press **enter**.

$$z_1 \cdot z_2 - z_3 = 9 - 14i$$



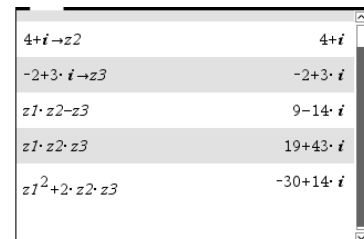
To calculate  $z_1 \cdot z_2 \cdot z_3$  type  $z1 \times z2 \times z3$  and press **enter**.

$$z_1 \cdot z_2 \cdot z_3 = 19 + 43i$$



To calculate  $z_1^2 + 2z_2 \cdot z_3$  type  $z1^2 + 2z2 \times z3$  and press **enter**.

$$z_1^2 + 2z_2 \cdot z_3 = -30 + 14i$$



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