

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.

To store a value press **[sto→]**.

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

To enter i press **[2nd]** **[i]**.

Press **[enter]**.

1-3i→P
1-3i

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

1-3i→P
1-3i
4+i→Q
4+i
-2+3i→R
-2+3i

To calculate $z_1 \cdot z_2 - z_3$ type $P \times Q - R$ and press **[enter]**.

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

1-3i→P
1-3i
4+i→Q
4+i
-2+3i→R
-2+3i
P*Q-R
9-14i

To calculate $z_1^2 + 2z_2 \cdot z_3$ type $P^2 + 2Q \times R$ and press **[enter]**.

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

4+i→Q
4+i
-2+3i→R
-2+3i
P*Q-R
9-14i
P^2+2Q*R
-30+14i