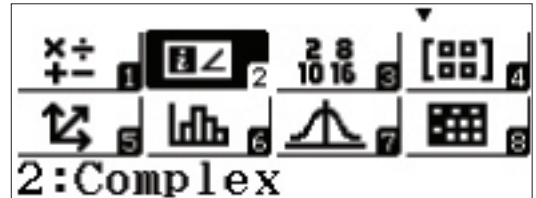


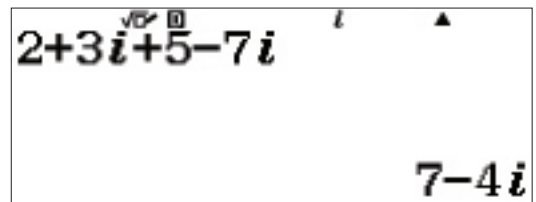
# COMPLEX

Complex Number calculations can be executed in the Complex Mode.

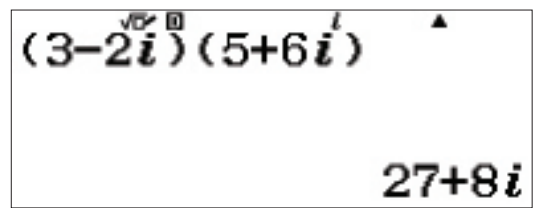
From the Main Menu, use the arrow keys to highlight the Complex icon, then press  $\square$  or press  $\square$ .



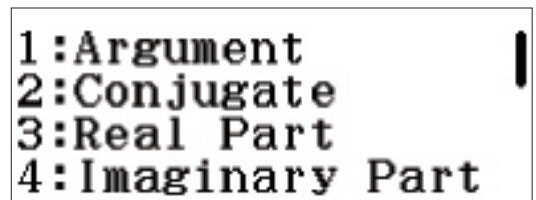
In Complex Mode, operations can be carried out using the imaginary unit ( $i$ ). To add complex numbers, press  $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$ .



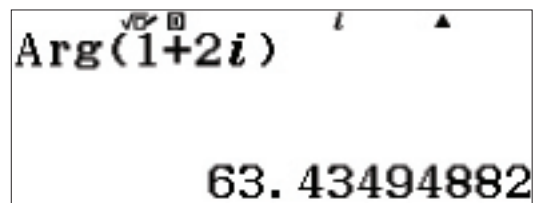
Complex numbers that are multiplied are displayed in complex format. Press  $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$ .



The argument of the complex number  $1+2i$ , can be found by taking the arctan ( $y/x$ ) =  $63.4349^\circ$  or by using the Argument command.



Press  $\square$   $\square$  (Argument)  $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$   $\square$ .

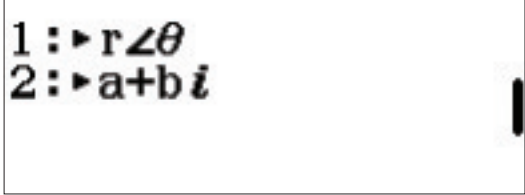


# COMPLEX

## RECTANGULAR AND POLAR FORM CONVERSION

To convert a complex number into polar form, press

$\boxed{2} \boxed{+} \boxed{5} \boxed{\text{ENG}} (i) \boxed{\text{OPTN}} \blacktriangledown \boxed{1} (:r\angle q) \boxed{=}$ .

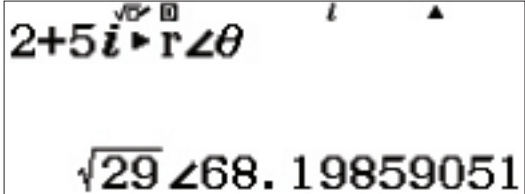


1: ▶  $r\angle\theta$   
2: ▶  $a+bi$

To convert any polar form of a complex number into rectangular form, use the r theta command or type in the angle in polar form.

Press  $\boxed{\text{AC}} \boxed{2} \boxed{\text{SHIFT}} \boxed{\text{ENG}} (\angle) \boxed{3} \boxed{3} \boxed{0} \boxed{\text{OPTN}} \blacktriangledown$

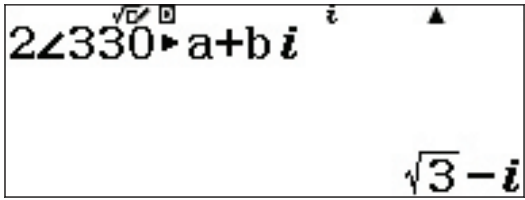
$\boxed{2} (:a+bi) \boxed{=}$ .



$2+5i \blacktriangleright r\angle\theta$   
 $\sqrt{29} \angle 68.19859051$

Alternately, simply type in the angle in polar form by pressing


$\boxed{2} \boxed{\text{SHIFT}} \boxed{\text{ENG}} (\angle) \boxed{3} \boxed{3} \boxed{0} \boxed{=}$ .




$2\angle 330 \blacktriangleright a+bi$   
 $\sqrt{3} - i$

These calculations can also be accomplished in radian mode.

To change to radian mode, press  $\boxed{\text{SHIFT}} \boxed{\text{MENU}} (\text{SET UP}) \boxed{2} (\text{Angle Unit}) \boxed{2} (\text{Radian})$ .



$2\angle 330$   
 $\sqrt{3} - i$



$2\angle \frac{11}{6}\pi$   
 $\sqrt{3} - i$