

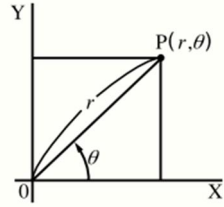
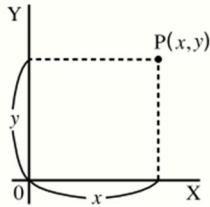
Polar and Rectangular

This resource was written by Derek Smith with the support of CASIO New Zealand. It may be freely distributed but remains the intellectual property of the author and CASIO.

The command '**Pol**' converts rectangular coordinates to polar coordinates. The command '**Rec**' converts polar coordinates to rectangular coordinates.

$$\text{Pol}(x, y) = (r, \theta)$$

$$\text{Rec}(r, \theta) = (x, y)$$



Rectangular Coordinates (Rec)

Polar Coordinates (Pol)

Specify the angle units (either Degrees or Radians) before performing the calculations.

The calculation result for r and θ , or x and y are assigned to the variables X and Y for recall.

Note that the calculation results for the angle is displayed in the domain $-180^\circ < \theta \leq 180^\circ$.

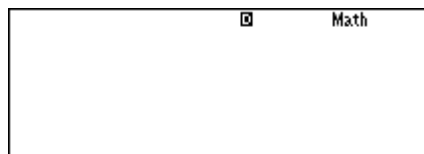
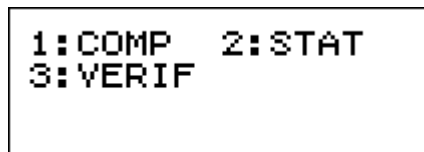
Pol(command is: [SHIFT] [2]



Rec(command is: [SHIFT] [3]

Setting up the Fx82AU+II

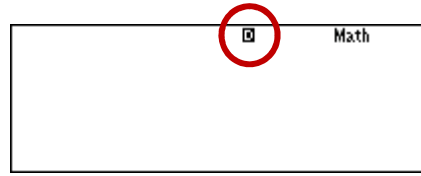
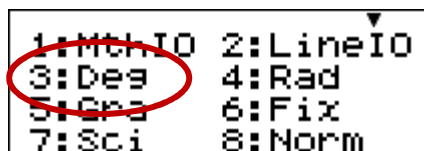
Select [MODE]



A:

For the angle to be degrees.

Select [SHIFT] [SETUP], then [3]



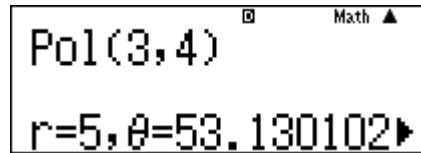
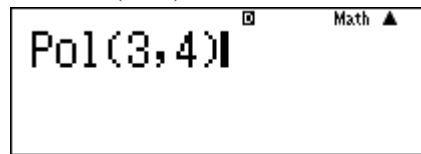
N.B. Angle is now confirmed to be in degrees display.

To enter the comma [SHIFT] [)]



Example 1:

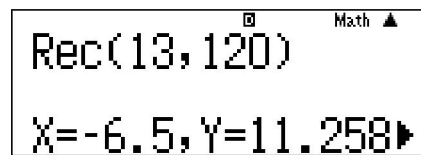
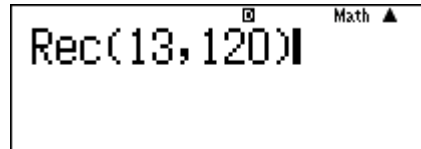
Convert (3, 4) to **Polar** form $r =$, $\theta =$



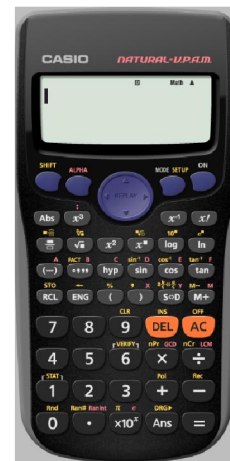
That is: $r = 5$, $\theta = 53.13^\circ$ rounded to 2 d.p.

Example 2:

Convert $r = 13$ and $\theta = 120^\circ$ to **Rectangular** form (x, y).



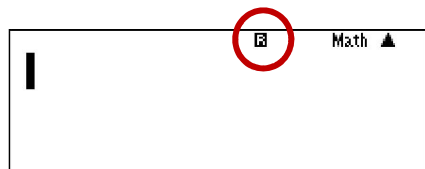
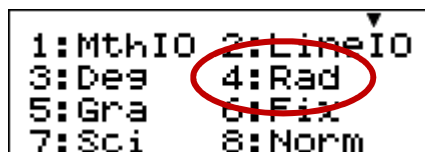
That is: (-6.5, 11.26) rounded to 2 d.p.



B:

For the angle to be radians.

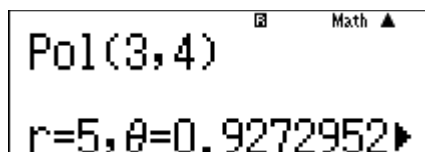
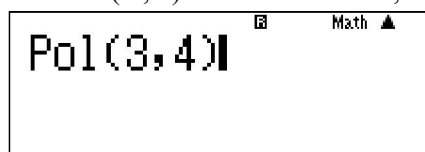
Select [SHIFT] [SETUP], then [4]



N.B. Angle is now confirmed to be in radian display.

Example 3:

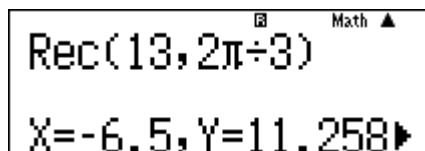
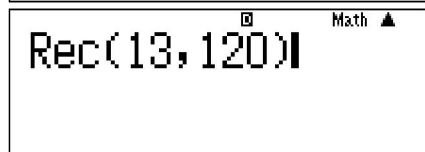
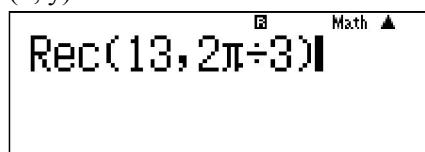
Convert (3, 4) to **Polar** form $r = \theta =$



That is: $r = 5$, $\theta = 0.93$ rad, rounded to 2 d.p.

Example 4:

Convert $r = 13$ and $\theta = \frac{2\pi}{3}$ to **Rectangular** form (x, y).



That is: (-6.5, 11.26) rounded to 2 d.p.

