



Procedure to find the Polar equivalent angles  $A_x$ ,  $A_y$  to Cartesian Point  $X, Y$

1. Calculate  $R$  using  $X, Y$  eq 1.
2. Calculate  $A_x$  using  $h$  and  $O = R$  eq 3.
3. Calculate  $a$  using  $h$  and  $A_x$  eq 2.
4. Calculate  $d$  using  $6.00 - a$
5. Calculate  $A_{y1}$  using  $90^\circ - A_{y0}$
6. Calculate  $A_{y2}$  using  $d$  and  $R$  eq 4.
7.  $A_y = A_{y1} + A_{y2}$

Given Values:

$h = 6.00$   
 $X, Y = 3.5, 3.0$   
 $O = R$

- eq 1.  $R = \sqrt{X^2 + Y^2}$   
 eq 2.  $a = h (\cos A_x)$   
 eq 3.  $A_x = \sin^{-1}(R / h)$   
 eq 4.  $A_{y2} = \tan^{-1}(d / R)$

Note: Points in other quadrants may require adjustments in value and/or sign.