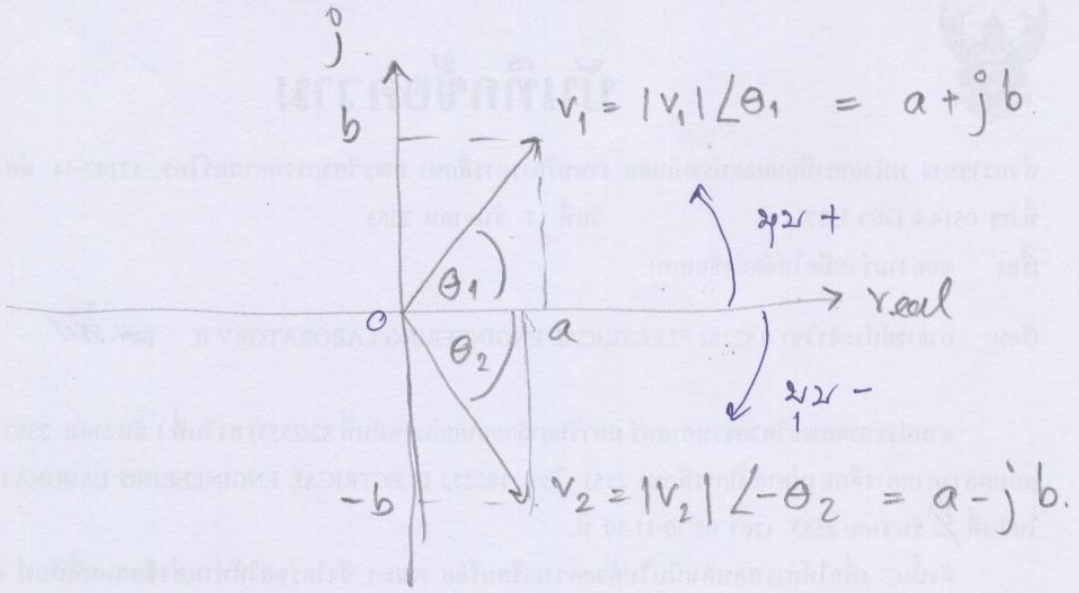
Vector



โจทย์ จงหาค่าในรูป polar form.

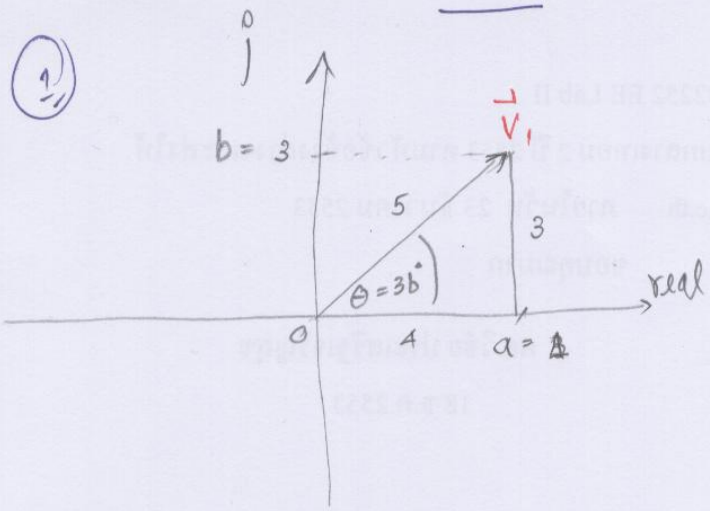
1. $\vec{V}_1 = 5 + j3 =$
2. $\vec{V}_2 = 5 - j3 =$
3. $\vec{V}_3 = -5 + j3 =$
4. $\vec{V}_4 = -5 - j3 =$

จงหาค่าในรูป rectangular form

5. $\vec{V}_5 = 5 \angle 30^\circ =$
6. $\vec{V}_6 = 5 \angle -30^\circ =$
7. $\vec{V}_7 = 5 \angle 150^\circ =$
8. $\vec{V}_8 = 5 \angle -150^\circ =$

Vector

(1)



$\tan\theta = \tan 36^\circ = 0.75$

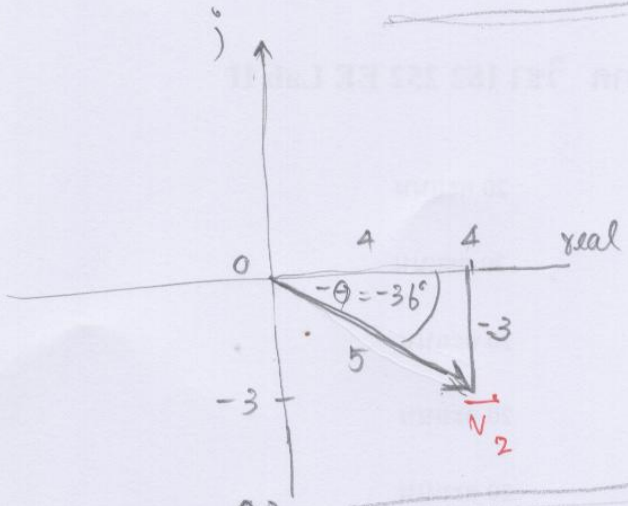
$\tan^{-1} 0.75 = 36^\circ$

$\vec{V}_1 = 4 + j3$

$= \sqrt{4^2+3^2} \angle \tan^{-1}\frac{3}{4}$

$= 5 \angle 36^\circ$

(2)



$\tan -\theta = \tan(-36^\circ) = -0.75$ ✓

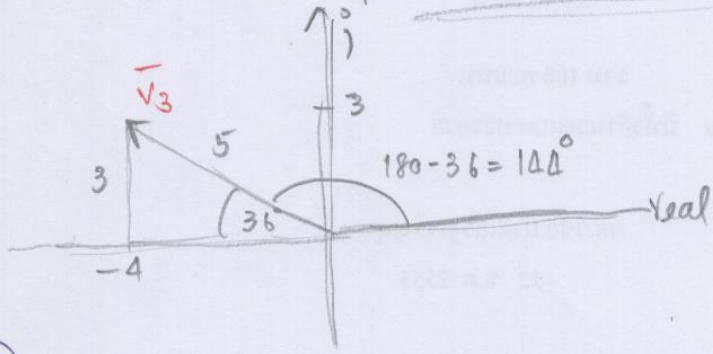
$\tan^{-1} -0.75 = -36^\circ$

$\vec{V}_2 = 4 - j3$

$= \sqrt{4^2+3^2} \angle \tan^{-1}\frac{-3}{4}$

$= 5 \angle -36^\circ$

(3)



$\tan 144^\circ = -0.75$ ✓

$\tan^{-1} -0.75 = 144^\circ$

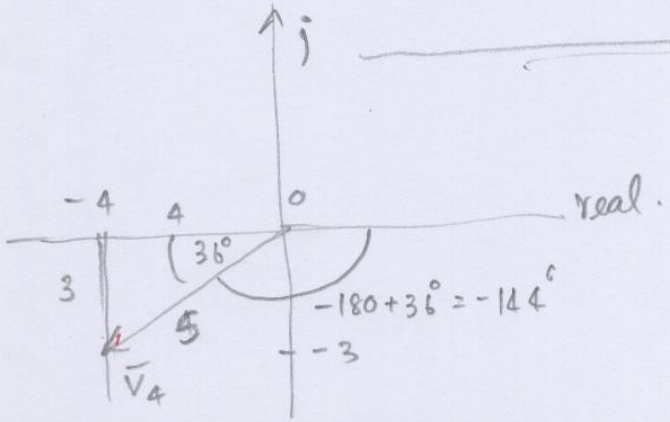
$\vec{V}_3 = -4 + j3$

$= \sqrt{4^2+3^2} \angle \tan^{-1}\frac{3}{-4}$

$= 5 \angle 180-36$

$= 5 \angle 144^\circ$

(4)



$\tan -144^\circ = +0.75$

$\tan^{-1} 0.75 = -144^\circ$

$\vec{V}_4 = -4 + j3$

$= \sqrt{4^2+3^2} \angle \tan^{-1}\frac{-3}{-4}$

$= 5 \angle 180^\circ + 36^\circ$

$= 5 \angle -144^\circ$