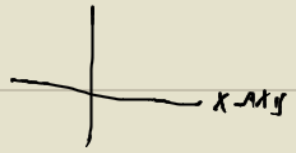
11. $\|v\| = 4 \quad \alpha = 30°$



$r(\cos\theta + i\sin\theta)$

$v = \|v\|(\cos\alpha\, i + \sin\alpha\, j)$

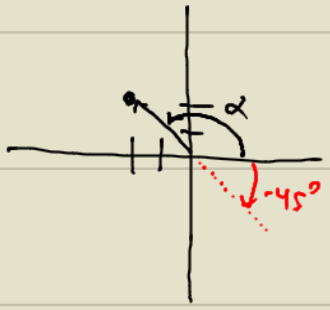
$v = 4(\cos 30° i + \sin 30° j)$

$= 4\left(\frac{\sqrt{3}}{2} i + \frac{1}{2} j\right)$

$= \frac{4\sqrt{3}}{2} i + \frac{4}{2} j$

$= \boxed{2\sqrt{3} i + 2 j}$

12. $v = \underset{a}{-2} i + \underset{b}{2} j$



so

$\tan\alpha = \frac{b}{a}$

$\tan\alpha = \frac{2}{-2}$

$\tan^{-1}(\tan\alpha) = \tan^{-1}(-1)$

$\alpha = \tan^{-1}(-1)$

$\alpha = -45°$

$+180°$

$\boxed{\alpha = 135°}$