(1d) $j^4 = j^2 \times j^2$

$= (-1) \times (-1)$

$= 1$

(e) $(5-2j)(1-6j)(3-2j)$

$= (5 - 30j - 2j + 12j^2)(3-2j)$

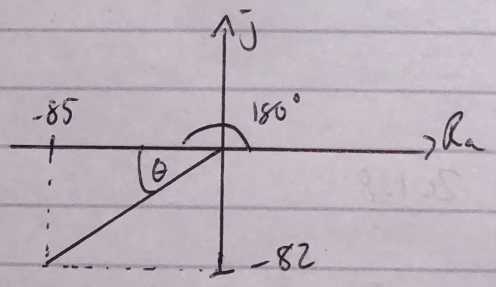
$= (5 - 32j + 12(-1))(3-2j)$

$= (-7 - 32j)(3-2j)$

$= (-21 + 14j - 96j + 64j^2)$

$= -21 - 82j + 64(-1)$

$= -85 - 82j$



$r = \sqrt{85^2 + 82^2}$

$r = 118.11$

$\theta = \tan^{-1}\left(\frac{82}{85}\right) + 180$

$\theta = 223.97$

$\therefore 118.11 (\cos 223.97 + j \sin 118.11)$