

Pg 5

ii) $(-3 + 8j)^5$

$$r^2 = 3^2 + 8^2$$

$$r = \sqrt{9 + 64}$$

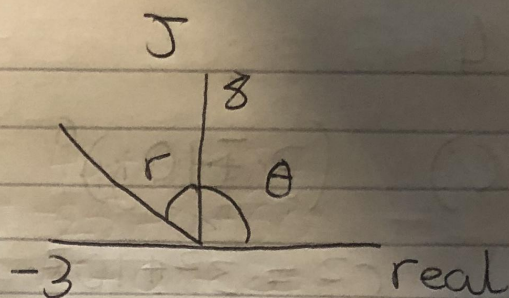
$$r = \sqrt{73}$$

$$r = 4.179$$

$$\tan^{-1} \left(\frac{8}{3} \right)$$

$$\theta = \tan^{-1} \left(\frac{8}{3} \right)$$

$$\theta = 69.443^\circ$$



$$\theta = 180 - 69.443$$

$$\theta = 110.557$$

$$4.179^5 (\cos 5 \times 110.557 + j \sin 5 \times 110.557)$$

$$1274.565611 (\cos 552.835 + j \sin 552.835)$$

$$1274.565611 (-0.4750138361 + -0.2221441411j)$$

P.F

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$$-1242.718131 - 283.1374048j \text{ Cartesian}$$

d) $j^5 \times j^3 = j^8$