1 Simplify: (a) j^3 (b) j^5 (c) j^{12} (d) j^{14}.

2 Express in the form $a + jb$:

(a) $(4 - j7)(2 + j3)$ (b) $(-1 + j)^2$

(c) $(5 + j2)(4 - j5)(2 + j3)$ (d) $\dfrac{4 + j3}{2 - j}$

3 Find the values of x and y that satisfy the equation:
$(x + y) + j(x - y) = 14{\cdot}8 + j6{\cdot}2$

4 Express in polar form:

(a) $3 + j5$ (b) $-6 + j3$ (c) $-4 - j5$

5 Express in the form $a + jb$:

(a) $5(\cos 225^\circ + j \sin 225^\circ)$ (b) $4\underline{|330^\circ}$

6 Express in exponential form:

(a) $z_1 = 10\underline{|37^\circ 15'}$ and (b) $z_2 = 10\underline{|322^\circ 45'}$

Hence find $\ln z_1$ and $\ln z_2$.

7 Express $z = e^{1+j\pi/2}$ in the form $a + jb$.