

Assignment 3

(5 questions
x 2 = 10 marks)

Write the following expressions in the form $a+bi$ using De Moivre's Theorem.

1) $(-1+i)^7$

2) $(2\sqrt{3}-2i)^6$

3) $(3-2i)^9$

4) $(5+2i)^5 (4-i)^4$

5) $\frac{(1-i)^7 (-1+i)^9}{(-1-i)^4 (1+i)^8}$

The following are optional and will not be graded.

6) $(1-i)^7$

7) $(1-i\sqrt{3})^{13}$

8) $(\sqrt{3}+i)^6 (1-i\sqrt{3})^7$

9) $\frac{(\sqrt{3}+i)^7 (3\sqrt{3}-3i)^4}{(-2\sqrt{3}+2i)^5 (-\sqrt{3}-i)^7}$

10) $\frac{(3+2i)^6 (2-i)^4}{(1+3i)^5 (-3-4i)^6}$