

Practice for Applications of Algebra and Calculus Assessment

Applications of Algebra and Calculus Assessment Standard 1.1

1. Expand

a. $(x+5)^6$

b. $(a+3)^5$

c. $(2x+1)^7$

d. $(1-2x)^5$

(3marks each)

2. (a) Express zw and $\frac{z}{w}$ in the form $a + ib$ when $z = p - 2i$, $w = 3 + i$. (4)

(b) $z_1 = 1 + 3i$, $z_2 = 3 - 2i$ are complex numbers.

Express z_1z_2 in Cartesian form and plot z_1z_2 on an Argand diagram. (2)

(c) $\omega = 1 + 4i$. Find $\bar{\omega}$ and $\frac{1}{\omega}$. (3)