King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math (001)-Term (141)
Recitation (1. 3)

Question 1: In standard form, the complex number $\dfrac{-7+26i}{4+3i} =$

A) $-\dfrac{11}{25}+\dfrac{7}{25}i$ B) $-2-9i$ C) $2-7i$ D) $2+5i$ E) $2-5i$

Answer: (D) $2+5i$

Question 2: If $z = i$, then $z^{1001}+2z^{1000}+3z^{999}+4z^{998} =$

A) $-2-2i$ B) $2-3i$ C) $-2+2i$ D) $2-i$ E) $3+2i$

Answer: (A) $-2-2i$

Question 3:

If $x = i$, then $2x^4+2x^3-x^2+1$ is equal to:

(a) $4+2i$ (d) 0

(b) $2+2i$ (e) $4-2i$

(c) $2-2i$

Answer: (e)

Question 4:

If $z = \dfrac{3i}{4-i}+i^{23}$ find the conjugate of z.

Answer: $\bar{z} = -\dfrac{3}{17}+\dfrac{5}{17}i$

Question 5:

Find the value of A and B in the following:

(a) If $\dfrac{\sqrt{-2}\sqrt{-8}+\sqrt[3]{-125}}{\sqrt{25}-\sqrt{-9}} = A+Bi$

(b) If $\dfrac{1}{2-3i}-\dfrac{1}{3-2i} = A+Bi$

Answer: **(a):** $A = -\dfrac{45}{34}$, $B = -\dfrac{27}{34}$ **(b):** $A = -\dfrac{1}{13}$, $B = \dfrac{1}{13}$