5. Complex Numbers & Quadratic Equations

Module III

Assignment - 3

1. Solve each equation.

a) $4x^2+20=0$ b) $4x^2+5=-7$ c) $x^2+4x=-20$ d) $x^2=8x-35$

e) $x^2+4x=-29$ f) $3(x+4)^2=-27$ g) $8r^2+4r+5=0$ h) $6p^2-8p=-3$

2. Write the expression as a complex number in standard form.

a) $\frac{5}{1+i}$ b) $\frac{3-3i}{4i}$ c) $\frac{-2-4i}{7i}$ d) $\frac{8+7i}{3-4i}$ e) $\frac{4+4i}{2-9i}$

3. **Write the expression as a complex number in standard form.**

a) $(5+2i)+(3-2i)$

b) $-i+(7-5i)-3(2-3i)$

c) $(-2+4i)+(3-9i)$

d) $(-2+4i)-(3+9i)$

e) $(5-2i)-2(3+i)$

f) $3i(6-5i)$

g) $i(2+i)$

h) $(2+3i)(1-4i)$

i) $(-3+7i)(1-2i)$

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

k) $(2i)(1-4i)(1+i)$

4. **Find the absolute value of the complex number.**

a) $-2+5i$

b) $4-5i$

c) $1-5i$

d) $-2+i$

e) $-5i$