Imaginary / Complex Numbers Practice

Name _____

Date _____

1. **For the complex number $-10+4i$, identify the real number and the imaginary number**.

2. **Evaluate.** a) i^2 b) i^3 c) i^4 d) i^9 e) i^{14}

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. **Solve each equation.**

a) $x^2 = -60$ b) $4x^2 + 20 = 0$ c) $6x^2 + 1 = -5$

d) $3(x-1)^2 = -27$ e) $(x+5)^2 + 10 = 2$ f) $5(2x+8)^2 = -80$

Answers

1. Real number: -10; Imaginary number: $4i$
2. A) $-2-4i$ B) $-7i$ C) 5 D) $3+2i$
3. a) -1 b) $-i$ c) 1
4. a) 8 b) $1+3i$ c) $1-5i$ d) $-5-5i$ e) $-1-4i$ f) $15+18i$