12.2 – Operations with Imaginary Numbers

Add or subtract the following complex numbers. *Remember
standard form!*

1. $(5 + 7i) + (-2 + 6i)$

   $5 + 7i - 2 + 6i$

   $3 + 13i$

2. $(8 + 3i) - (2 + 4i)$

   $8 + 3i - 2 - 4i$

   $6 - i$

Multiply the following complex numbers. $i^2 = -1$

1. $5i(-4i)$

   $-20i^2$

   $-20(-1)$

   20

2. $12i \cdot 7i$

   $84i^2$

   $84(-1)$

   -84

3. $(2 + 3i)(-3 + 5i)$ FOIL

   $-6 + 10i - 9i + 15i^2$

   $-6 + i + 15(-1)$

   $-6 + i - 15$

   $-21 + i$

4. $(6 - 5i)(4 - 3i)$ FOIL

   $24 - 18i - 20i + 15i^2$

   $24 - 38i + 15(-1)$

   $24 - 38i - 15$

   $9 - 38i$

5. $(4 - 9i)(4 - 9i)$ FOIL

   $16 - 36i - 36i + 81i^2$

   $16 - 72i + 81(-1)$

   $16 - 72i - 81$

   $-65 - 72i$