# More Operations with Complex Numbers (ALG.CN.08)

**Perform each operation and write the result in standard form.**

1. $\dfrac{5}{3-i} + \dfrac{2}{3+i}$     $\dfrac{21}{10} + \dfrac{3}{10}i$

2. $\dfrac{3i}{2-4i} - \dfrac{5}{2+4i}$     $-\dfrac{11}{10} + \dfrac{13}{10}i$

3. $\dfrac{4i}{4+i} - \dfrac{4+3i}{11-7i}$     $\dfrac{1}{10} + \dfrac{99}{170}i$

4. $\dfrac{2+7i}{6+i} + \dfrac{5}{i}$     $\dfrac{19}{37} - \dfrac{145}{37}i$

**Determine values of $a$ and $b$ that satisfy each equation.**

5. $\dfrac{a}{3+2i} + \dfrac{bi}{3-2i} = 4 - i$     $a = 26,\ b = 13$

6. $\dfrac{a+bi}{4i} - \dfrac{3-i}{3i} = \dfrac{5}{6} - \dfrac{1}{4}i$     $a = 3,\ b = 2$

7. $\dfrac{bi}{3+7i} = \dfrac{14}{29} + \dfrac{6}{29}i$     $b = 4$

8. $\dfrac{a-3i}{a+7i} = \dfrac{2}{37} - \dfrac{a^2}{37}i$     $a = 5$