

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

Perform each operation and write the result in standard form.

1. $\frac{5}{3-i} + \frac{2}{3+i}$

2. $\frac{3i}{2-4i} - \frac{5}{2+4i}$

3. $\frac{4i}{4+i} - \frac{4+3i}{11-7i}$

4. $\frac{2+7i}{6+i} + \frac{5}{i}$

Determine values of a and b that satisfy each equation.

5. $\frac{a}{3+2i} + \frac{bi}{3-2i} = 4 - i$

6. $\frac{a+bi}{4i} - \frac{3-i}{3i} = \frac{5}{6} - \frac{1}{4}i$

7. $\frac{bi}{3+7i} = \frac{14}{29} + \frac{6}{29}i$

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