

Rationalizing Imaginary Denominators

Date _____ Period _____

Simplify. Hint: Use the conjugate!

1) $\frac{2}{8i}$ (Multiply by $-8i$)

2) $\frac{3}{5i}$

$$\text{Ex: } \frac{2}{8i} \cdot \frac{-8i}{-8i} = \frac{-16i}{-64i^2} = \frac{-16i}{64(-1)} = \frac{-16i}{-64} = \frac{-2i}{8} = \boxed{\frac{-i}{4}}$$

3) $\frac{-5}{-5i}$

4) $\frac{-1}{-9i}$

5) $\frac{6}{-4i}$

6) $\frac{6+8i}{9i}$

7) $\frac{4-9i}{-6i}$

8) $\frac{-3+10i}{-6i}$

9) $\frac{-1+8i}{-i}$

10) $\frac{10-10i}{-5i}$

11) $\frac{5i}{-2-6i}$

12) $\frac{8i}{-1+3i}$

Ex: Multiply by $-2+6i$

$$\frac{5i}{-2-6i} \cdot \frac{-2+6i}{-2+6i} = \frac{-10i+30i^2}{4-12i+12i-36i^2} = \frac{-10i+30(-1)}{4-36(-1)} = \frac{-10i-30}{40} = \frac{-30}{40} - \frac{10i}{40} = \boxed{\frac{-3}{4} - \frac{i}{4}}$$