

Math Sheet

Name _____ Score _____ / 10 Teacher _____ Date _____

Rationalizing Imaginary Denominators

Simplify each quotient and write the answer in standard $a + bi$ form.

1. $\frac{-4 + i}{-2 - 7i}$

2. $\frac{-1 + 8i}{9i}$

3. $\frac{8}{-6i}$

4. $\frac{8 + 6i}{4i}$

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

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

7. $\frac{-1}{7i}$

8. $\frac{-7}{i}$

9. $\frac{3 - 3i}{-2 + 6i}$

10. $\frac{4 + 5i}{3i}$

Rationalizing Imaginary Denominators

Answer Key

Simplify each quotient and write the answer in standard a + bi form.

1. $\frac{-4 + i}{-2 - 7i}$

Reasoning: Multiply by conjugate;

den = 53; Answer:

$$\frac{1 - 30i}{53}$$

2. $\frac{-1 + 8i}{9i}$

Reasoning: Multiply by -i / -i;

den = 9; Answer:

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

3. $\frac{8}{-6i}$

Reasoning: Multiply by i / i;

den = 6; Answer:

$$\frac{4i}{3}$$

4. $\frac{8 + 6i}{4i}$

Reasoning: Multiply by -i / -i;

den = 4; Answer:

$$\frac{3 - 4i}{2}$$

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

Reasoning: Multiply by conjugate;

den = 25; Answer:

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

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

Reasoning: Multiply by i / i;

den = 4; Answer:

$$\frac{5i}{4}$$

7. $\frac{-1}{7i}$

Reasoning: Multiply by -i / -i;

den = 7; Answer:

$$\frac{i}{7}$$

8. $\frac{-7}{i}$

Reasoning: Multiply by -i / -i;

den = 1; Answer:

$$7i$$

9. $\frac{3 - 3i}{-2 + 6i}$

Reasoning: Multiply by conjugate;

den = 40; Answer:

$$\frac{-6 - 3i}{10}$$

10. $\frac{4 + 5i}{3i}$

Reasoning: Multiply by -i / -i;

den = 3; Answer:

$$\frac{5 - 4i}{3}$$