

Name:

Date:

Dividing Radical Expressions

Rationalizing Using Conjugates

Simplify

1.
$$\frac{-6 - 3\sqrt{7}}{1 - 8\sqrt{7}}$$

2.
$$\frac{3 + 7\sqrt{5}}{6 + \sqrt{5}}$$

3.
$$\frac{6\sqrt{2} - \sqrt{3}}{6\sqrt{2} + 7\sqrt{3}}$$

4.
$$\frac{7\sqrt{2} - 5}{-5 + 3\sqrt{2}}$$

5.
$$\frac{-8 - \sqrt{10}}{6\sqrt{10} + 8}$$

6.
$$\frac{8\sqrt{2} - 5}{9\sqrt{5} + 6\sqrt{10}}$$

7.
$$\frac{\sqrt{8} - \sqrt{2}}{\sqrt{2} - \sqrt{3}}$$

8.
$$\frac{\sqrt{5} - \sqrt{3}}{\sqrt{3} + \sqrt{5}}$$

9.
$$\frac{\sqrt{2} - \sqrt{5}}{\sqrt{5} - \sqrt{2}}$$

10.
$$\frac{2 + \sqrt{7}}{1 - \sqrt{7}}$$

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Answers

$$1. \frac{-6 - 3\sqrt{7}}{1 - 8\sqrt{7}}$$

$$\frac{58 + 17\sqrt{7}}{149}$$

$$3. \frac{6\sqrt{2} - \sqrt{3}}{6\sqrt{2} + 7\sqrt{3}}$$

$$\frac{-31 - 16\sqrt{6}}{25}$$

$$5. \frac{-8 - \sqrt{10}}{6\sqrt{10} + 8}$$

$$\frac{-10\sqrt{10} - 1}{74}$$

$$7. \frac{\sqrt{8} - \sqrt{2}}{\sqrt{2} - \sqrt{3}}$$

$$-2 - \sqrt{6}$$

$$9. \frac{\sqrt{2} - \sqrt{5}}{\sqrt{5} - \sqrt{2}}$$

$$-1$$

$$2. \frac{3 + 7\sqrt{5}}{6 + \sqrt{5}}$$

$$\frac{-17 + 39\sqrt{5}}{31}$$

$$4. \frac{7\sqrt{2} - 5}{-5 + 3\sqrt{2}}$$

$$\frac{-20\sqrt{2} - 17}{7}$$

$$6. \frac{8\sqrt{2} - 5}{9\sqrt{5} + 6\sqrt{10}}$$

$$\frac{34\sqrt{10} - 47\sqrt{5}}{15}$$

$$8. \frac{\sqrt{5} - \sqrt{3}}{\sqrt{3} + \sqrt{5}}$$

$$4 - \sqrt{15}$$

$$10. \frac{2 + \sqrt{7}}{1 - \sqrt{7}}$$

$$\frac{-3 - \sqrt{7}}{2}$$