

Worksheet – Rationalizing Binomial Denominators

Simplify.

1. $\frac{3}{4+4\sqrt{5}}$

2. $\frac{5}{-5-3\sqrt{3}}$

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

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

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

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

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

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

Answers

$$1. \frac{3}{4+4\sqrt{5}}$$
$$\frac{-3+3\sqrt{5}}{16}$$

$$2. \frac{5}{-5-3\sqrt{3}}$$
$$\frac{25-15\sqrt{3}}{2}$$

$$3. \frac{5}{-3-3\sqrt{3}}$$
$$\frac{5-5\sqrt{3}}{6}$$

$$4. \frac{4}{\sqrt{2}-5\sqrt{3}}$$
$$\frac{-4\sqrt{2}-20\sqrt{3}}{73}$$

$$5. \frac{2+5\sqrt{3}}{-4+4\sqrt{2}}$$
$$\frac{2+2\sqrt{2}+5\sqrt{3}+5\sqrt{6}}{4}$$

$$6. \frac{\sqrt{5}+2\sqrt{2}}{4-\sqrt{5}}$$
$$\frac{4\sqrt{5}+5+8\sqrt{2}+2\sqrt{10}}{11}$$

$$7. \frac{\sqrt{5}+3}{4-\sqrt{5}}$$
$$\frac{7\sqrt{5}+17}{11}$$

$$8. \frac{3-4\sqrt{3}}{4\sqrt{5}+3\sqrt{2}}$$
$$\frac{12\sqrt{5}-9\sqrt{2}-16\sqrt{15}+12\sqrt{6}}{62}$$