

Operations with Radical Expressions Assignment

Add, subtract and simplify the following expressions. Assume that all variables represent positive real numbers.

1. $2\sqrt{3} + 3\sqrt{3} - 10\sqrt{3} =$

2. $3\sqrt{6} + \sqrt{24} =$

3. $3\sqrt{2} + \sqrt{50} - 5\sqrt{8} =$

4. $\sqrt{300} - \sqrt{27} - \sqrt{75} =$

5. $\sqrt[5]{x^6} + 6\sqrt[5]{32x^6} - \sqrt[5]{243x^{11}} =$

6. $\sqrt{(2+y)} + 6\sqrt{(2+y)} - (2+y)^{\frac{1}{2}} =$

Multiply and simplify the following expressions. Assume that all variables represent positive real numbers.

7. $\sqrt{3}(\sqrt{5} - \sqrt{3}) =$

8. $\sqrt{6a^3b^2}(\sqrt{6ab^2} - \sqrt{4ab}) =$

9. $(\sqrt{5} + \sqrt{2})(\sqrt{2} - \sqrt{5}) =$

10. $(x + 3\sqrt{x})(2\sqrt{x} - x) =$

11. $(\sqrt{5} - \sqrt{3})^2 =$

12. $(\sqrt{x} - \sqrt{2x})^2 =$

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Simplify the following expressions. Assume that all variables represent positive real numbers.

13. $\sqrt{3} * \sqrt[3]{2} =$

14. $\sqrt[4]{y} * \sqrt{x+1} =$

Simplify the following expressions (rationalize the denominator). Assume that all variables represent positive real numbers.

15. $\frac{3}{\sqrt{7}} =$

16. $\frac{16}{\sqrt[4]{4}} =$

17. $\frac{2}{2 - \sqrt{3}} =$

18. $\frac{1 - x}{1 - \sqrt{x}} =$