

Review Exercise Set 18

Exercise 1: Simplify the expression.

$$-4\sqrt{12} + 3\sqrt{27} - 10\sqrt{3} =$$

Exercise 2: Simplify the expression.

$$\frac{2\sqrt{20}}{3} - \frac{5\sqrt{5}}{6} + \frac{3\sqrt{45}}{4} =$$

Exercise 3: Simplify the expression.

$$-\sqrt[3]{54} + 2\sqrt[3]{16} - 9\sqrt[3]{2} =$$

Exercise 4: Simplify the expression.

$$(-5\sqrt{3})(3\sqrt{8}) =$$

Exercise 5: Simplify the expression.

$$(\sqrt{2} + \sqrt{3})(2\sqrt{7} - \sqrt{2}) =$$

Review Exercise Set 18 Answer Key

Exercise 1: Simplify the expression.

$$\begin{aligned} -4\sqrt{12} + 3\sqrt{27} - 10\sqrt{3} &= -4\sqrt{4 \times 3} + 3\sqrt{9 \times 3} - 10\sqrt{3} \\ &= -4(2\sqrt{3}) + 3(3\sqrt{3}) - 10\sqrt{3} \\ &= -8\sqrt{3} + 9\sqrt{3} - 10\sqrt{3} \\ &= -9\sqrt{3} \end{aligned}$$

Exercise 2: Simplify the expression.

$$\begin{aligned} \frac{2\sqrt{20}}{3} - \frac{5\sqrt{5}}{6} + \frac{3\sqrt{45}}{4} &= \frac{2\sqrt{20}}{3} \times \frac{4}{4} - \frac{5\sqrt{5}}{6} \times \frac{2}{2} + \frac{3\sqrt{45}}{4} \times \frac{3}{3} \\ &= \frac{8\sqrt{20}}{12} - \frac{10\sqrt{5}}{12} + \frac{9\sqrt{45}}{12} \\ &= \frac{8\sqrt{4 \times 5}}{12} - \frac{10\sqrt{5}}{12} + \frac{9\sqrt{9 \times 5}}{12} \\ &= \frac{8(2\sqrt{5})}{12} - \frac{10\sqrt{5}}{12} + \frac{9(3\sqrt{5})}{12} \\ &= \frac{16\sqrt{5}}{12} - \frac{10\sqrt{5}}{12} + \frac{27\sqrt{5}}{12} \\ &= \frac{33\sqrt{5}}{12} \\ &= \frac{11\sqrt{5}}{4} \end{aligned}$$

Exercise 3: Simplify the expression.

$$\begin{aligned} -\sqrt[3]{54} + 2\sqrt[3]{16} - 9\sqrt[3]{2} &= -\sqrt[3]{27 \times 2} + 2\sqrt[3]{8 \times 2} - 9\sqrt[3]{2} \\ &= -3\sqrt[3]{2} + 2(2\sqrt[3]{2}) - 9\sqrt[3]{2} \\ &= -3\sqrt[3]{2} + 4\sqrt[3]{2} - 9\sqrt[3]{2} \\ &= -8\sqrt[3]{2} \end{aligned}$$

Exercise 4: Simplify the expression.

$$\begin{aligned}(-5\sqrt{3})(3\sqrt{8}) &= (-5 \times 3)(\sqrt{3} \times \sqrt{8}) \\ &= -15\sqrt{24} \\ &= -15\sqrt{4 \times 6} \\ &= -15(2\sqrt{6}) \\ &= -30\sqrt{6}\end{aligned}$$

Exercise 5: Simplify the expression.

$$\begin{aligned}(\sqrt{2} + \sqrt{3})(2\sqrt{7} - \sqrt{2}) &= \sqrt{2}(2\sqrt{7} - \sqrt{2}) + \sqrt{3}(2\sqrt{7} - \sqrt{2}) \\ &= \sqrt{2}(2\sqrt{7}) - \sqrt{2}(\sqrt{2}) + \sqrt{3}(2\sqrt{7}) - \sqrt{3}(\sqrt{2}) \\ &= 2\sqrt{14} - \sqrt{4} + 2\sqrt{21} - \sqrt{6} \\ &= 2\sqrt{14} - 2 + 2\sqrt{21} - \sqrt{6}\end{aligned}$$