

Additional Problems (Answers on p. 2)

R8 (part 1) Assume all variables are positive.

Evaluate each perfect root:

① $\sqrt{25}$

② $\sqrt{25x^4}$

③ $\sqrt[3]{8(1+x)^3}$

Simplify each expression

④ $\sqrt{50}$

⑤ $\sqrt[3]{16}$

⑥ $\sqrt[3]{-16}$

⑦ $\sqrt{\frac{25x^3}{9x}}$ $x \neq 0$

⑧ $\frac{\sqrt{3xy^3} \sqrt{2x^2y}}{\sqrt{6x^3y^4}}$

⑨ $\sqrt{\frac{16y^4}{9x^2}}$

⑩ $\sqrt{8x^3} - 3\sqrt{50x}$

Perform the indicated operation and simplify

⑪ $\sqrt{3}(\sqrt{3} - 4)$

⑫ $3\sqrt{7}(2\sqrt{7} + 3)$

⑬ $(\sqrt{2} - 1)^2$

⑭ $3\sqrt{6} \cdot 4\sqrt{3}$

⑮ $(\sqrt[3]{2} - 1)^3$

⑯ $(2\sqrt{x} - 3)(2\sqrt{x} + 5)$

Rationalize the denominators:

⑰ $\frac{8}{\sqrt{6}}$

⑱ $\frac{1}{\sqrt{x} + 2}$

R8 (part 2)

Simplify each expression. Leave only positive exponents in your answers.

① $\sqrt[8]{x^4}$

② $\sqrt{x^3} \sqrt[4]{x}$

③ $x^{3/2} x^{-1/2}$

④ $(x^3 y^6)^{2/3}$

⑤ $\left(\frac{x^{2/5} y^{-1/5}}{x^{-1/3}} \right)^{15}$

Answers

R8 (part 1)

① 5 ② $5x^2$ ③ $2(1+x)$

④ $5\sqrt{2}$ ⑤ $2\sqrt[3]{2}$ ⑥ $-2\sqrt[3]{2}$ ⑦ $\frac{5}{3}x$

⑧ 1 ⑨ $\frac{4y^2}{3x}$ ⑩ $(2x-15)\sqrt{2x}$

⑪ $3-4\sqrt{3}$ ⑫ $42+9\sqrt{7}$ ⑬ $3-2\sqrt{2}$

⑭ $36\sqrt{2}$ ⑮ $1-3\sqrt[3]{4}+3\sqrt[3]{2}$ ⑯ $4x+4\sqrt{x}-15$

⑰ $\frac{4\sqrt{6}}{3}$ ⑱ $\frac{\sqrt{x}-2}{x-4}$

R9 (part 2)

① \sqrt{x} ② $x^{7/4}$ ③ x

④ x^2y^4 ⑤ $\frac{x^{11}}{y^3}$