

$$1. \int \sqrt{x} dx = \int x^{1/2 + 1} \frac{3/2}{\frac{1}{2} + 1} \frac{x}{3/2} = \frac{2x^{3/2}}{3/2} = +C.$$

$$2. \int \sqrt{\frac{2}{x^3}} dx = \int 2x^{-3/2 + 1} \frac{2x^{-1/2}}{-3/2 + 1} = -4x^{-1/2} = -\frac{4}{\sqrt{x}} + C$$

$$3. \int \frac{5}{\sqrt{x}} dx = \int 5x^{-1/2 + 1} dx = \frac{5x^{1/2}}{-1/2} = \frac{5x^{1/2}}{1/2} = \frac{5x^{1/2}}{1/2} = 10\sqrt{x} + C$$

$$4. \int (2x^2 + 4x + 2) dx = \int 2x^2 dx + \int 4x dx + \int 2 dx$$

$$\frac{2x^3}{3} + 2x^2 + 2x + C.$$

$$5. \int 8\sqrt{x} dx$$

$$8x^{1/2} dx + C = 8x \frac{1/2 + 1}{\frac{1}{2} + 1} + C = \frac{8x^{3/2}}{3/2} + C =$$

$$6. \int \frac{2}{\sqrt{x^2}} dx = \frac{2 dx}{x^{2/5}} = \int 2x^{-2/5} dx = 2x$$

$$- \frac{2/5 + 1}{-2/5 + 1} \frac{2x}{5/5} + C$$

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$$7. \int 4x^2 dx = \frac{4x^2+1}{2+1} + C = \frac{4x^3}{3} + C$$

$$8. \int \frac{6}{\sqrt{x}} dx = \int \frac{6 dx}{x^{1/2}} = \int 6x^{-1/2} dx = \frac{6x^{-1/2+1}}{-1/2+1} = \frac{6x^{1/2}}{1/2}$$

$$9. \int (2x^3 + 2x) dx = 8x^3 + 8x$$

$$\frac{8x^3+1}{3+1} = \frac{8x^4}{4} = \frac{4x^4+8x}{2x^4+8+C} = 2x^4 = 2x^4 + 8 + C$$

$$10. \int \sqrt{x^5} dx = \int x^{5/2} dx = \frac{x^{5/2+1}}{5/2+1} = x^{7/2} = \frac{2}{7} \sqrt{x^7} + C.$$

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$$1. \int 5\sqrt{x^3} dx = \int 5x^{3/5} dx + C = \frac{5x^{3/5+1}}{\frac{3}{5}+1} + C = \frac{5x^{8/5}}{\frac{8}{5}} + C = 5x^{8/5} + C$$

$$\frac{10}{8} x^{8/5} + \frac{2\sqrt{x^5} + C}{-1/2}$$

$$2. \int \frac{2}{\sqrt{x}} dx = \int \frac{2 dx}{x^{1/2}} = \int 2x^{-1/2} dx = \frac{2x^{-1/2+1}}{-1/2+1} = \frac{2x^{1/2}}{1/2} = 4\sqrt{x} + C$$

$$3. \int 8\sqrt[3]{x^2} dx = \int 8x^{2/3} dx + C = \frac{8x^{2/3+1}}{2/3+1} + C = \frac{8x^{5/3}}{5/3} + C = \frac{24}{5}x^{5/3} + C$$

$$4. \int (2x^3 + 5x^2 + x + 2) dx = \int 2x^3 dx + \int 5x^2 dx + \int x dx + \int 2 dx$$

$$\frac{2x^4}{4} + \frac{5x^3}{3} + \frac{x^2}{2} + 2x + C = \frac{x^4}{2} + \frac{5x^3}{3} + x^2 + 2x + C$$

$$5. \int 5\sqrt[4]{x^3} dx = \int 5x^{3/4} dx + C = \frac{5x^{3/4+1}}{3/4+1} + C = \frac{5x^{7/4}}{7/4} + C = \frac{20x^{7/4}}{7} + C$$

$$6. \int \frac{8}{5\sqrt{x^3}} dx = \int \frac{8 dx}{5x^{3/5}} = \int 8x^{-3/5} dx = 8 \frac{x^{-3/5+1}}{-3/5+1} = \frac{8x^{2/5}}{2/5} + C$$

$$\frac{40x^{2/5}}{2} + C = 20\sqrt[5]{x^2} + C$$

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