

$$a) \int 2x^{2+1} - \sqrt{3x^2 + 4x} dx$$

$$\frac{2x^3}{3} - \frac{2\sqrt{6x^2}}{7} + 2x^2 + C$$

$$\frac{2x^3}{3} + \frac{3x^{5/2+2/2}}{3} = \frac{3x^{7/2}}{3} =$$

$$\frac{6x^{7/2}}{6} = \frac{5}{2} + 2/2 = \frac{7}{2}$$

$$\frac{6x^{7/2}}{7} = \frac{2\sqrt{6x^2}}{7}$$

$$b) \int 4x^{3+1} + 2x^{1/2} + 5x^{3/4} - 7x^{2+1} dx$$

$$x^4 + 4x\sqrt{x} - 7x^3 + 20x\sqrt[4]{x^3} + C$$

$$x^4 + 4x\sqrt{x} + 20x\sqrt[4]{x^3} =$$

$$x^4 + 4x^{3/2} + 20x^{7/4} - 7x^3$$

$$\frac{7x^3}{3}$$

$$x^4 + 4x\sqrt{x} - 7x^3 + 20x\sqrt[4]{x^3}$$

$$c) \int \sqrt[5]{3x} dx$$

$$\frac{3x^{4/5+5/5}}{4/5+5/5} = \frac{3x^{9/5}}{9/5} = \frac{15x^{9/5}}{9} = \frac{5x^{9/5}}{3} = \sqrt[5]{5x^9} + C$$

$$d) \int 8x^2 - \sqrt[4]{6x} dx$$

$$\frac{8x^{2+1}}{2+1} = \frac{8x^3}{3} \quad \frac{6x^{1/4+4/4}}{1/4+4/4} = \frac{6x^{5/4}}{5/4} = \frac{24x^{5/4}}{5} =$$

$$= \frac{8x^3}{3} - \frac{\sqrt[4]{24x^5}}{5} + C$$

$$\frac{8x^3}{3} - \frac{\sqrt[4]{24x^5}}{5} + C$$

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$$k) \int 7x^3 \sqrt{x} dx \quad \int 7x^{3+1/2} dx \quad x^{3+1/2} = x^{7/2} \quad 1 = 3/2$$

$$\frac{14x^{9/2}}{9/2} + c = \frac{14x^{9/2}}{9/2} + c$$

$$l) \int 4x^3 + x^2 dx \quad 4x^3 dx \quad x^{2+1} = x^3$$

$$\frac{4x^4}{4} + \frac{x^3}{3} + c = x^4 + \frac{x^3}{3} + c$$

$$m) \int 3u^5 - 2u^3 dx \quad 3 \cdot \frac{u^6}{6} - 2 \cdot \frac{u^4}{4} + c = \frac{u^6}{2} - \frac{u^4}{2} + c$$

$$n) \int 4^3 (2u^5 - 4) du \quad 2 \cdot \frac{4^3 u^6}{6} - 4 \cdot \frac{4^3 u^4}{4} + c$$

$$\frac{4^3 u^6}{3} - 4^4 u^3 + c$$

$$o) \int x^9 (5 - x^2) dx \quad 5 \cdot \frac{x^{10}}{10} - \frac{x^{12}}{12} + c$$

$$\frac{5x^{10}}{10} - \frac{x^{12}}{12} + c$$

$$p) \int (3t - 2t^2 + t^3) dt \quad \frac{3t^2}{2} - \frac{2t^3}{3} + \frac{t^4}{4} + c$$

$$q) \int \sqrt{x} (x+1) dx \quad \int x^{1/2} (x+1) dx \quad x^{1/2+2/2} = x^{3/2}$$

$$\frac{x^{5/2}}{5/2} + \frac{x^{3/2}}{3/2} + c = \frac{2x^{5/2}}{5} + \frac{2x^{3/2}}{3} + c$$

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$$R) \int (8x^{4+1} + 4x^{3+1} - 6x^{2+1} - 8) dx$$

$$\frac{8x^5}{5} + x^4 - 2x^3 - 8x + C$$

$$S) \int (2 + 3x^{2+1} - 8x^{3+1}) dx$$

$$2x + x^3 - 2x^4 + C$$

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20-06-22

$$T) \int \sqrt[3]{x} (x+1) dx \quad 3x^{7/3}$$

$$\frac{3x^{7/3}}{7/3} + 3x^{3/4}$$

$$\frac{3x^{7/3}}{7} + \frac{3x^{4/3}}{4} + C$$

$$U) \int (ax^{2+1} + bx^{1+1} + c) dx$$

$$\frac{ax^3}{3} + \frac{bx^2}{2} + cx + C$$

$$V) \int (\sqrt{x} - \frac{1}{\sqrt{x}}) dx$$

$$\frac{2x\sqrt{x}}{3} - 2\sqrt{x} + C$$