

Ch 7.2

1. $\int (3x - 2)^4 dx$
 $u = 3x - 2$
 $du = 3 dx$
 $\frac{1}{3} \int u^4 du$
 $\frac{1}{3} \frac{u^5}{5}$
 $\frac{u^5}{15}$
 $\frac{1}{15} (3x - 2)^5$
2. $\int \sqrt{5x + 4} dx$
 $u = 5x + 4$
 $du = 5 dx$
 $\frac{1}{5} \int \sqrt{u} du$
 $\frac{1}{5} \int u^{1/2} du$
 $\frac{1}{5} \frac{2}{3} u^{3/2}$
 $\frac{2}{15} \sqrt{5x + 4}^3$
3. $\int 4(6x - 1)^{2/3} dx$
 $u = 6x - 1$
 $du = 6 dx$
 $\frac{2}{3} \int u^{2/3} du$
 $\frac{2}{3} \frac{3}{5} u^{5/3}$
 $\frac{4}{5} u^{5/3}$
 $\frac{4}{5} (6x - 1)^{5/3}$
4. $\int x\sqrt{x^2 - 2} dx$
 $u = x^2 - 2$
 $du = 2x dx$
 $\frac{1}{2} \int \sqrt{u} du$
 $\frac{1}{2} \int u^{1/2} du$
 $\frac{1}{2} \frac{2}{3} u^{3/2}$
 $\frac{1}{3} u^{3/2}$
 $\frac{1}{3} (x^2 - 2)^{3/2}$
5. $\int x^2 \sqrt{1 - 4x^3} dx$
 $u = 1 - 4x^3$
 $du = -12x^2 dx$
 $-\frac{1}{12} \int \sqrt{u} du$
 $-\frac{1}{12} \int u^{1/2} du$
 $-\frac{1}{12} \frac{2}{3} u^{3/2}$
 $-\frac{1}{18} u^{3/2}$
 $-\frac{1}{18} (1 - 4x^3)^{3/2}$
6. $\int x / (\sqrt[3]{2x^2 - 1}) dx$
 $u = 2x^2 - 1$
 $du = 4x dx$
 $\frac{1}{4} \int \frac{1}{\sqrt[3]{u}} du$
 $\frac{1}{4} \int u^{-1/3} du$
 $\frac{1}{4} \frac{3}{2} u^{2/3}$
 $\frac{3}{8} u^{2/3}$
 $\frac{3}{8} (2x^2 - 1)^{2/3}$
 $\frac{3}{8} (2x^2 - 1)^{2/3}$

$$7. \int x^{1/2} (x^{3/2} + 4)^9 dx$$

$$u = x^{3/2} + 4$$

$$du = 3\sqrt{x} / 2 dx$$

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$$8. \int (x + 2) \sqrt{x^2 + 4x - 5} dx$$

$$u = x^2 + 4x - 5$$

$$du = 2x + 4 dx$$

$$1/2 \int 2x + 4 \sqrt{u} dx$$

$$1/2 \int \sqrt{u} du$$

$$1/2 \cdot 1 / 2\sqrt{u}$$

$$1 / 4\sqrt{x^2 + 4x - 5}$$

$$9. \int x - \sqrt{3x} dx$$

$$u = 3x$$

$$du = 3 dx$$

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$$10. \int \sqrt{x^2 - 1} dx$$

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