

Memo

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$$1) = \frac{x^{5+1}}{5+1} + C$$

$$= \frac{x^6}{6} + C$$

$$\boxed{\text{or}} = \frac{1}{6} x^6 + C$$

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

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

$$\boxed{\text{or}} = \frac{4}{3} x^3 + C$$

$$3) = \int 2(x^0) dx \rightarrow * \text{you add this...}$$

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

$$= 2xc + C$$

$$4) = \int (a^0) \underline{\underline{da}} \rightarrow \text{you have to add this so you can find answer in terms of } a$$

$$= a^1 + C$$

5) $\int 2x^{-2} dx$ → moved up from denominator

$$= \frac{2x^{-2+1}}{-1} + C$$

$$= -2x^{-1} + C$$

$$= \frac{-2}{x} + C$$

6) $\int 3y^0 dy$ * add self

$$= \frac{3y^1}{1} + C$$

$$= 3y + C$$

7) $\int 0.23 r^0 dr$ *

$$= \frac{0.23 r^{0+1}}{1} + C$$

$$= 0.23 r + C$$

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

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

or

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

moved to back.

9) $\int \frac{1}{x^3} dx$

$$= \int x^{-3} dx$$

$$= \frac{x^{-3+1}}{-3+1} + C$$

$$= \frac{x^{-2}}{-2} + C = \frac{1}{-2x^2} + C$$

$$10) = 3 \left(\frac{x^{3+1}}{4} \right) + C$$

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

or

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

$$11) = -2 \left(\frac{3x^{1+1}}{2} \right) + C$$

$$= \frac{-2}{1} \left(\frac{3x^2}{2} \right) + C$$

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

How?? $\rightarrow \sqrt{x^2} = x$

$$12) = \int x \cdot dx$$

$$= \frac{x^2}{2} + C$$

or

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

$$13) = \int 3 \cdot x^{\frac{3}{2}} dx$$

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

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

$$= \left(3 \sqrt{x^5} \div \frac{5}{2} \right) + C$$

$$= \left(\frac{3\sqrt{x^5}}{1} \times \frac{2}{5} \right) + C$$

$$= \frac{6\sqrt{x^5}}{5} + C$$

$$\begin{aligned}
 14) &= \int \frac{1}{3} x^{-2} dx \\
 &= \frac{1}{3} \left(\frac{x^{-2+1}}{-1} \right) + C \\
 &= \frac{1}{3} (-x^{-1}) + C \\
 &= -\frac{1}{3} x^{-1} + C \\
 &= -\frac{1}{3x} + C
 \end{aligned}$$

$$\begin{aligned}
 15) &= \int 4 x^{-5} dx \\
 &= \frac{4x^{-5+1}}{-4} + C \\
 &= -x^{-4} + C \\
 &= -\frac{1}{x^4} + C
 \end{aligned}$$

$$16) = \frac{x^{\pi+1}}{\pi+1} + C$$

$$\begin{aligned}
 17) &= \int \pi x^0 dx \\
 &= \frac{\pi x^1}{1} + C \\
 &= \pi x + C
 \end{aligned}$$

$$18) = -\frac{1}{4} \left(\frac{t^{1+1}}{2} \right) + C$$
$$= -\frac{t^2}{8} + C$$

$$19) = \int ax^0 dx$$
$$= \frac{ax^1}{1} + C$$
$$= ax + C$$

$$20) = \int \sqrt{5} x^{\frac{1}{2}} dx$$
$$= \sqrt{5} \left(\frac{x^{\frac{1}{2}+1}}{\frac{3}{2}} \right) + C$$
$$= \sqrt{5} \left(\frac{x^{\frac{3}{2}}}{1} \div \frac{3}{2} \right) + C$$
$$= \frac{\sqrt{5}}{1} \left(\frac{\sqrt{x^3}}{1} \times \frac{2}{3} \right) + C$$
$$= \frac{2\sqrt{5}x^3}{3} + C$$