



## Integration – Simple examples

Name \_\_\_\_\_

Date \_\_\_\_\_

Calculate indefinite integral.

(1)  $\int (7x^2 + 4x + 21) dx$

(2)  $\int \operatorname{ch} x dx$

(3)  $\int \frac{dx}{4x^2 + 1}$

(4)  $\int \sin \frac{x}{2} dx$

(5)  $\int \cos \frac{x}{7} dx$

(6)  $\int (x^2 - 1)^3 dx$

(7)  $\int x dx$

(8)  $\int \frac{dx}{(1-x)^3}$

(9)  $\int 1 dx$

(10)  $\int \frac{dx}{\sqrt{4-x^2}}$

(11)  $\int (5x^2 - 12x + 49) dx$

(12)  $\int (x^2 - 1)^2 dx$

(13)  $\int (2x^2 - 20x - 14) dx$

(14)  $\int e^{-x} dx$

(15)  $\int x^3 dx$

(16)  $\int \frac{dx}{\sqrt{4-x^2}}$

(17)  $\int \frac{dx}{x^3}$

(18)  $\int (3x^2 + 12x - 3) dx$



## Answers

Calculate indefinite integral.

$$(1) \quad \frac{7}{3}x^3 + 2x^2 + 21x$$

$$(3) \quad \frac{1}{2} \arctan 2x$$

$$(5) \quad 7 \sin \frac{x}{7}$$

$$(7) \quad \frac{x^2}{2}$$

$$(9) \quad x$$

$$(11) \quad \frac{5}{3}x^3 - 6x^2 + 49x$$

$$(13) \quad \frac{2}{3}x^3 - 10x^2 - 14x$$

$$(15) \quad \frac{x^4}{4}$$

$$(17) \quad -\frac{1}{2x^2}$$

$$(2) \quad \operatorname{sh} x$$

$$(4) \quad -2 \cos \frac{x}{2}$$

$$(6) \quad \frac{x^7}{7} - \frac{3x^5}{5} + x^3 - x$$

$$(8) \quad \frac{1}{2(1-x)^2}$$

$$(10) \quad \arcsin \frac{x}{2}$$

$$(12) \quad \frac{x^5}{5} - \frac{2x^3}{3} + x$$

$$(14) \quad -e^{-x}$$

$$(16) \quad \arcsin \frac{x}{2}$$

$$(18) \quad x^3 + 6x^2 - 3x$$