① $\int_{-2}^{2} x^2 \, dx$

$\int x^2 \, dx$

$\dfrac{x^3}{3}$

$\dfrac{x^3}{3} \Big|_{-2}^{2}$

$\dfrac{2^3}{3} - \dfrac{(-2)^3}{3}$

$\dfrac{8}{3} - \dfrac{(-2)^3}{3}$

$\dfrac{8}{3} - \dfrac{-8}{3}$

$\boxed{\dfrac{16}{3}}$

② $\int_{-3}^{3} (2x^2 + 3) \, dx$

$\int 2x^2 + 3 \, dx$

$\int 2x^2 \, dx + \int 3 \, dx$

$\dfrac{2x^3}{3} + \int 3 \, dx$

$\dfrac{2x^3}{3} + 3x$

$\left(\dfrac{2x^3}{3} + 3x \right) \Big|_{-3}^{3}$

$\dfrac{2 \times 3^3}{3} + 3 \times 3 - \left(\dfrac{2 \times (-3)^3}{3} + 3 \times (-3) \right)$

$2 \times 3^2 + 9 - \left(\dfrac{2 \times (-3^3)}{3} - 9 \right)$

$2 \times 9 + 9 - \left(2 \times (-3^2) - 9 \right)$

$18 + 9 - (-2 \times 9 - 9)$

$18 + 9 - (-27)$

$18 + 9 + 27$

$\boxed{54}$

③ $\int_{-3}^{3} x^4 (x^3 - x) \, dx$

$\int x^4 \cdot x (x^3 - x) \, dx$

$\int x^7 - x^5 \, dx$

$\int x^7 \, dx - \int x^5 \, dx$

$\dfrac{x^8}{8} - \dfrac{x^6}{6}$

$\left(\dfrac{x^8}{8} - \dfrac{x^6}{6} \right) \Big|_{-3}^{3}$

$\dfrac{3^8}{8} - \dfrac{3^6}{6} - \left(\dfrac{(-3)^8}{8} - \dfrac{(-3)^6}{6} \right)$

0

④ $x = v \cdot t$

$x = 8 \cdot 2$

$x = 16 \, hm$

⑤ $x = v \cdot t$

$x = 16 \cdot 9$

$x = 144 \, Km$

$x = 72 \, /_7$

⑥

$$f(x) = 9 - \left(\frac{x}{2}\right)^2$$

$$0 = 9 - \frac{x^2}{4}$$

$$\frac{x^2}{4} = 9$$

$$x^2 = 36$$

$$x = \pm 6$$

$$x = -6$$

$$x = 6$$

$$x_1 = -6, \quad x_2 = 6$$