

$f(x) = 9 - x^2$  ?  $x$ -int

even function

$a = -3$   
 $b = 3$   
 $\Delta x = \frac{3 - (-3)}{n} = \frac{6}{n}$   
 $x_i = -3 + \frac{6}{n}i$   
 $f(x_i) = 9 - \left(-3 + \frac{6}{n}i\right)^2$

OR as even:  
 $a = 0$  }  $\Delta x = \frac{3-0}{n}$   
 $b = 3$  }  
 $x_i = 0 + \frac{3}{n}i$   
 $f(x_i) = 9 - \left(\frac{3}{n}i\right)^2$

②  $\int_{-3}^3 f(x) dx = -1$   
 find  $\int_{-3}^3 f(x) dx = f_{\text{even}} : -1 \cdot 2$

ODD:  
 $f(-x) = -f(x)$   
 $\int_{-\pi}^{\pi} \sin x dx = 0$

back to #31:  $\int_{-3}^3 f(x) dx = 0$

25-30:  
 $\int_0^2 f(x) dx = 2$      $\int_1^2 f(x) dx = -1$

$\int_2^4 f(x) dx = 7$

②  $\int_1^4 f(x) dx = \int_1^2 f(x) dx + \int_2^4 f(x) dx = -1 + 7 = 6$

③  $\int_0^3 f(x) dx = 3 \left[ \int_0^1 f(x) dx + \int_1^2 f(x) dx \right]$   
 $= 3(2+7)$   
 $= 27$

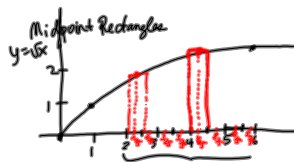
④  $\int_0^1 f(x) dx$   
 $= \int_0^2 f(x) dx - \int_1^2 f(x) dx$   
 $= 3 - 2 = 1$

⑤  $\int_0^1 f(x+1) dx = \int_1^2 f(x) dx = -1$



⑥  $\int_0^2 (f(x)+3) dx$   
 $= \int_0^2 f(x) dx + \int_0^2 3 dx$   
 $= 2 + 2 \cdot 3$   
 $= 8$

$\int_0^2 f(x) dx = \int_2^4 f(x-2) dx = 2$



$\Delta x = \frac{6-0}{4} = \frac{3}{2}$

$\text{Area} \approx \frac{1}{2} \left[ \sqrt{1.5} + \sqrt{3} + \sqrt{4.5} + \sqrt{6} \right] \cdot \frac{3}{2}$

$\approx 7.914$

