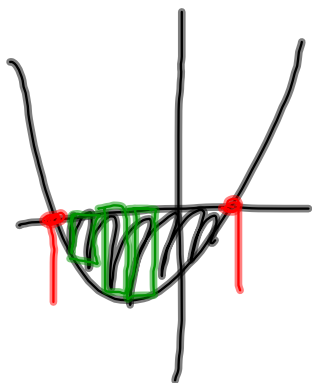


$x =$  area under  
velocity curve

$$\frac{dx}{dt} = v$$

$$x = \int v dt$$

INTEGRALS ARE  
THE AREA UNDER  
A CURVE



sums

$$\sum_{i=1}^3 3i + 5$$

$$(3 \cdot 1 + 5) + (3 \cdot 2 + 5) + (3 \cdot 3 + 5)$$

$$8 + 11 + 14 = \textcircled{33}$$

$$\sum_{j=3}^7 j^2 = 3^2 + 4^2 + 5^2 + 6^2 + 7^2 = 135$$

$$\sum_{i=1}^6 i = 1 + 2 + 3 + 4 + 5 + 6$$

$$\sum_{i=0}^5 i+1 = 1 + 2 + 3 + 4 + 5 + 6$$

$$\frac{2}{4+1} + \frac{2}{4+2} + \frac{2}{4+3} + \cdots + \frac{2}{4+15}$$

$$\sum_{i=1}^{15} \frac{2}{4+i}$$

$$\sum_{i=1}^4 3 = 3 + 3 + 3 + 3 = 3 \cdot 4 = 12$$

$$\sum_{i=1}^{15} k = 15k$$

$$\sum_{i=1}^n 3 = 3n$$

## Sumation Laws

$$\textcircled{1} \sum_{i=1}^n c = cn$$

$$\sum_{i=1}^n i = 1 + 2 + 3 + 4 + \dots + n$$

$$\textcircled{2} \sum_{i=1}^n i = \frac{n(n+1)}{2}$$

$$\sum_{i=1}^4 i = 1 + 2 + 3 + 4 = 10$$

$$\frac{4(4+1)}{2} = 10 \checkmark$$