

Worksheet # 25: Area and Distance

1. Write each of following in summation notation:

(a) $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10$

(b) $2 + 4 + 6 + 8 + 10 + 12 + 14$

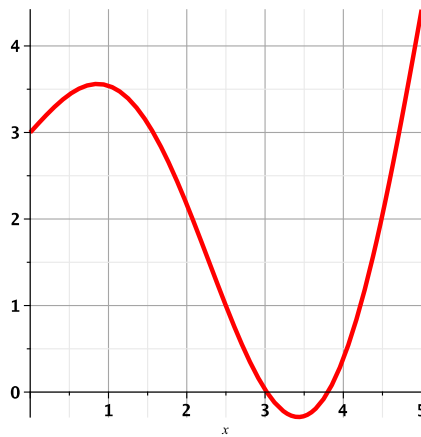
(c) $2 + 4 + 8 + 16 + 32 + 64 + 128$.

2. Compute $\sum_{i=1}^4 \left(\sum_{j=1}^3 (i+j) \right)$.

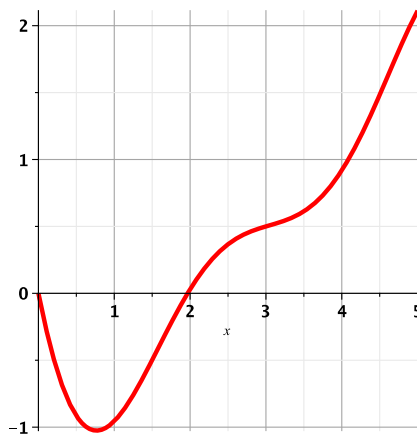
3. Find the number n such that $\sum_{i=1}^n i = 78$.

4. A particle starts from rest at a point P and travels with constant acceleration of 5 m/s^2 to another point Q . If it takes the particle 30 seconds to travel from P to Q what is the distance between P and Q ?

5. Below is the graph of the velocity function for a particle traveling along a straight line. Use several rectangles to estimate (a) the net displacement and (b) the total distance traveled by the particle from $t = 0$ to $t = 5$.



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7. Let A be the area under the curve $y = x^2$ from $x = 0$ to $x = 4$.
- (a) Using right endpoints, find an expression for A as a limit. Do not evaluate the limit.
 - (b) Estimate the area by taking sample points to be midpoints and using four subintervals.