

(b) Sample points = 3, 5, 7, 9

width of each interval = 2

$$\text{Area} = 2 \left[\left(\frac{1}{3} + 2\right) + \left(\frac{1}{5} + 2\right) + \left(\frac{1}{7} + 2\right) + \left(\frac{1}{9} + 2\right) \right]$$

$$= 2 \left[\frac{7}{3} + \frac{11}{5} + \frac{15}{7} + \frac{19}{9} \right]$$

$$= 2 \left[2.33 + 2.2 + 2.14 + 2.11 \right]$$

$$= 2 \cdot (8.88)$$

$$= \boxed{17.76}$$

(c) Average of (a) and (b) = $\frac{19.54 + 17.76}{2} = \boxed{18.65}$

(d) Sample points = 2, 4, 6, 8

width of each interval = 2

$$\text{Area} = 2 \left[\left(\frac{1}{2} + 2\right) + \left(\frac{1}{4} + 2\right) + \left(\frac{1}{6} + 2\right) + \left(\frac{1}{8} + 2\right) \right]$$

$$= 2 \left[\frac{5}{2} + \frac{9}{4} + \frac{13}{6} + \frac{17}{8} \right]$$

$$= 2 \left[2.5 + 2.25 + 2.16 + 2.12 \right]$$

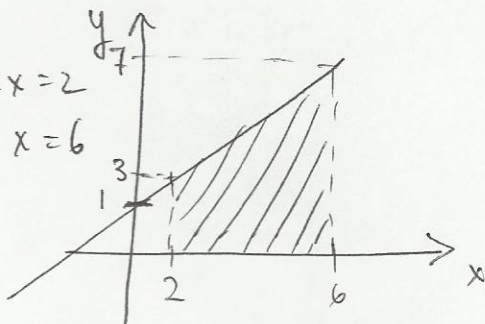
$$= 2 (9.03)$$

$$= \boxed{18.06}$$

11 $\int_2^6 (1+x) dx$ $y=1+x$ is a straight line

$$y = 1 + 2 = 3 \text{ when } x = 2$$

$$y = 1 + 6 = 7 \text{ when } x = 6$$



Area of a trapezium

$$= \frac{1}{2} [\text{Sum of parallel sides}] \times$$

Distance between the sides

$$\text{Find the area of the shaded region} = \frac{1}{2} [7 + 3] \times 4$$

$$= 10 \times 2 = \boxed{20}$$