1b) $\sum_{j=2}^{6}(3j-1) = 5+8+11+14+17 = 55$

5) $(1\cdot 2)+(2\cdot 3)+(3\cdot 4) \dots +(49\cdot 50) = \sum_{n=1}^{49}(n)(n+1)$

19) $4\sum_{k=1}^{6}k^3 - 2\sum_{k=1}^{6}k + \sum_{k=1}^{6}1 = 4\left(\frac{(6)(7)}{2}\right)^2 - 2\left(\frac{(6)(7)}{2}\right) + 6$

$= 4(21)^2 - 2(21) + 6 = 4(441) - 42 + 6 = 1728$

25) $\displaystyle\sum_{k=1}^{n} \frac{3k}{n} = \frac{3}{n} \sum_{k=1}^{n} k = \frac{3}{n} \frac{(n)(n+1)}{2} = \frac{3n+3}{2}$

43) $\displaystyle\sum_{k=5}^{n} 3^k - 3^{k-1} = \left(3^5 - 3^4\right) + \left(3^6 - 3^5\right) + \cdots + \left(3^{17} - 3^{16}\right)$

$-3^4 \qquad\qquad\qquad\qquad +3^{17}$

$3^{17} - 3^4$

p414 17c,19c,21,23,25,33,37

17c)

$$\int_{-1}^{4} x \, dx = 7.5$$

$-\frac{1}{2} 1 \cdot 1 = -\frac{1}{2}$

$\frac{1}{2} 4 \cdot 4 = 8$

$A = 7.5$
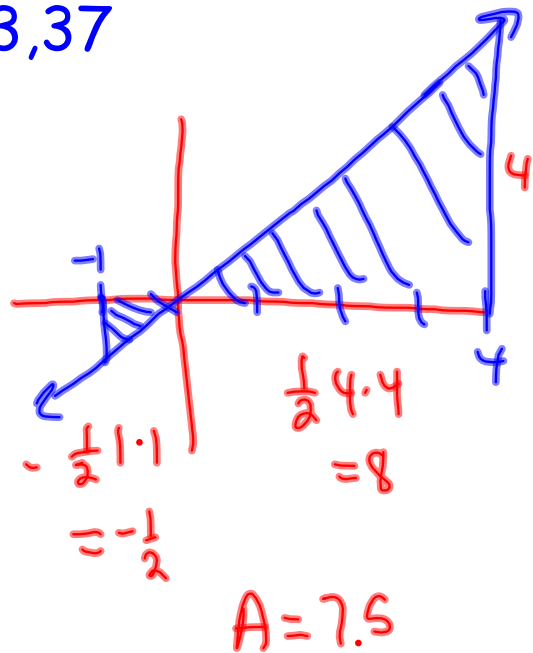
19c) $\int_{-1}^{2} |2x-3|\, dx$

$A_1 = \frac{1}{2}\left(\frac{5}{2}\right)(5)$

$A_1 = \frac{25}{4}$

$A_2 = \frac{1}{2}\left(\frac{1}{2}\right)(1)$

$= \frac{1}{4}$

$A = \frac{26}{4} = \frac{13}{2}$

$\int_{-1}^{2} |2x-3|\, dx = \frac{13}{2}$

$y = 2x-3 \qquad y = -(2x-3)$
$\qquad\qquad\qquad y = -2x+3$

$\frac{3}{2}$

$2x-3 = 0$
$2x = 3$
$x = \frac{3}{2}$

4