Answers to Revision for TT4

1 b) $\boxed{f(x)=5+\frac{9}{25}x-\frac{81}{3125}x^2+O(x^3)}$

2) $\boxed{\frac{dy}{dx}=\frac{3\left(x^2-y^2e^{3x}\right)}{2\left(2+ye^{3x}\right)}}$, $\boxed{C=4e^{-\frac{3}{2}}}$

4) $\boxed{A=4}$, $\boxed{B=3}$, $\boxed{\frac{3}{4}+2\ln 2}$

6) M $\boxed{v_{max}=9\,\text{ms}^{-1}}$, $\boxed{t=\frac{25}{4}=6.25\text{ s}}$, $\boxed{d=\frac{775}{12}\approx 64.58\text{ m}}$

7) M $\boxed{V_{min}\approx 35.89}$, $\boxed{\text{speed}\approx 41.85\text{ ms}^{-1},\ \approx 23.8^\circ\text{ below horizontal}}$

6) D

(a)

35 23 10 46 24 11
35 23 10 46 24 11
35 23 10 46 24 11
35 23 46 10 24 11
35 23 46 24 10 11
35 23 46 24 11 10

35 23 46 24 11
35 23 46 24 11
35 46 23 24 11
35 46 24 23 11
35 46 24 23 11

35 46 24 23
46 35 24 23
46 35 24 23
46 35 24 23

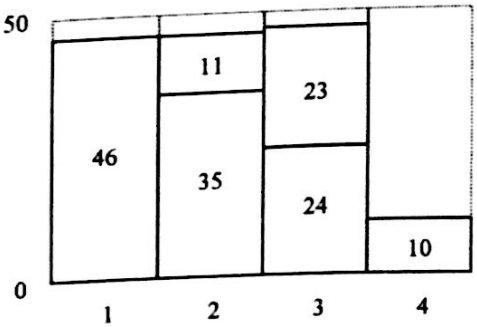
46 35 24
46 35 24
46 35 24

46 35
46 35

giving 46 35 24 23 11 10 M2 A2

(b) $7+6+5+4+3+2+1=28$ A1

(c)



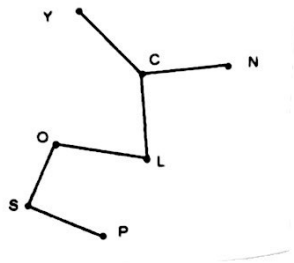
M1 A1

11 could not go into 1st bin but could fit in 2nd bin B1 (8)

Answers to Revision for TT4

(7) D

L-O 56
L-C 60
C-N 62
O-S 63
S-P 43
C-Y 156
Total length 440 (miles)



(8) D

(a)

n	x_n	a	Any more data?	x_{n+1}	b	$(b-a) > 0$?	a
1	8	8	Yes	2	2	No	2
2	–	–	Yes	4	4	Yes	–
3	–	–	Yes	3	3	Yes	–
4	–	–	Yes	5	5	Yes	–
5	–	–	Yes	1	1	No	1
6	–	–	Yes	7	7	Yes	–
7	–	–	No				

Final Output = 1

M2 A4

(b) it finds the smallest value in the set of data

B1 (7)