ACTIVITIES 10.1 - 10.2 *Notes and Solutions*

Notes and solutions given only where appropriate.

10.1 1. (a)

n	$\frac{2n+1}{n-1}$	$\frac{3n+4}{2n+1}$	$\frac{5n+2}{n+1}$	$\frac{6n-3}{2n+1}$
2	5	2	4	1.8
5	2.75	1.727273	4.5	2.454545
10	2.333333	1.619048	4.727273	2.714286
20	2.157895	1.560976	4.857143	2.853659
50	2.061224	1.524752	4.941176	2.940594
100	2.030303	1.512438	4.970297	2.970149
1000	2.003003	1.501249	4.997003	2.997001
10 000	2.0003	1.500125	4.9997	2.9997
100 000	2.00003	1.500012	4.99997	2.99997
1 000 000	2.000003	1.500001	4.999997	2.999997

(b) 2, 1.5, 5, 3

2. Approaches $\frac{a}{c}$

10.2 1. 1, 2, 3, 4, 6, 8, 11, 13, 16, 18

2. $7 = 1 + 6 = 3 + 4$; $9 = 1 + 8 = 3 + 6$

3. $14\ (= 1 + 13 = 3 + 11 = 6 + 8)$

4. 26, 28, 36, 38

5. 47, 48

ACTIVITY 10.3 *Notes and Solutions*

Notes and solutions given only where appropriate.

10.3 1. $a+b+c$ $4a+2b+c$ $9a+3b+c$ $16a+4b+c$ $25a+5b+c$

2. 1st diff. $3a+b$ $5a+b$ $7a+b$ $9a+b$

2nd diff. $2a$ $2a$ $2a$

3.

2	3	5	8	12	17
	1	2	3	4	5
		1	1	1	1

4. (a) $2a=1$ so $a=\frac{1}{2}$

(b) $3a+b=1$ so $b=-\frac{1}{2}$

} giving $u_n=\frac{1}{2}n^2-\frac{1}{2}n+2$

(c) $a+b+c=2$ so $c=2$

5.

11	16	25	38	55
	5	9	13	17
		4	4	4

So $2a=4$ and $a=2$

$3a+b=5$ and $b=-1$

$a+b+c=11$ and $c=10$

} giving $u_n=2n^2-n+10$