Out of   **49**

1			
a/**2**	b/**2**	c/**3**	d/**3**
Correct, though it would have been more accurate to write 'there exists i' rather than 'smallest i'		Solution correct and explained, though the explanation could have been written more clearly	Solution correct but explanation of steps not provided
2	2	3	2

2			
a/**2**	b/**2**	c/**2**	d/**2**
			The steps shown In these proofs is insufficient. The full set of steps for an equivalence should be shown
1	1	1	1

3	
a/**3**	b/**2**
Insufficient explanation on why each of the path formulae hold	Well reasoned explanation of the reason that the example does not hold
2	2

4
/**5**
5

5	
a/**2**	b/**2**
	Example given but not justified
2	1

6	7	8
/**6**	/**6**	/**5**
Induction is well carried out. It would have been better, however, to insert the proof concerning the A operator, rather than state its similarity to E	Correct methodology but no attempt or mention of the back relation is seen	Good guess. However, I would have liked to have seen a more formal induction regarding points 5 and 7.

3 4 5