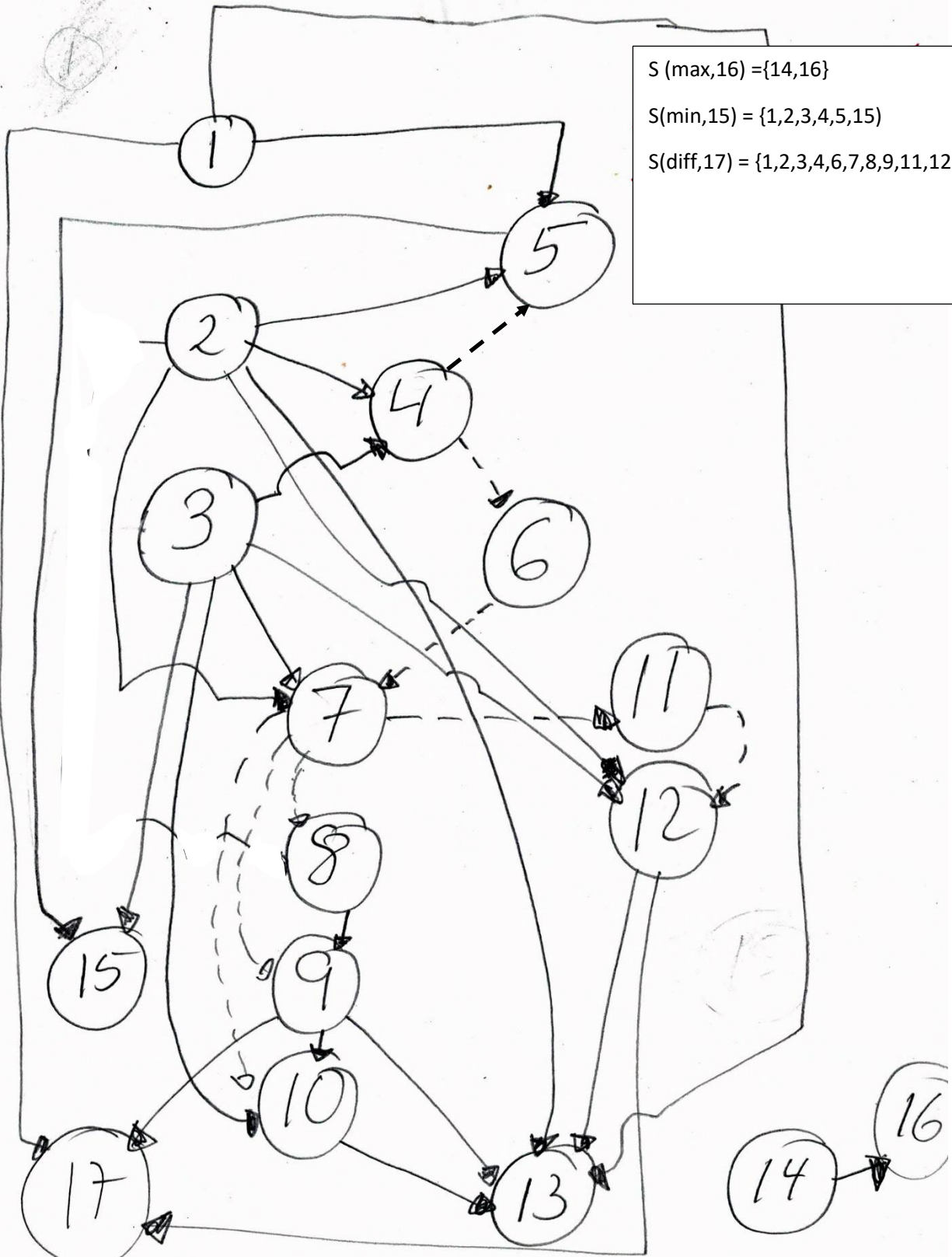


Q#1: Static Backward Slicing



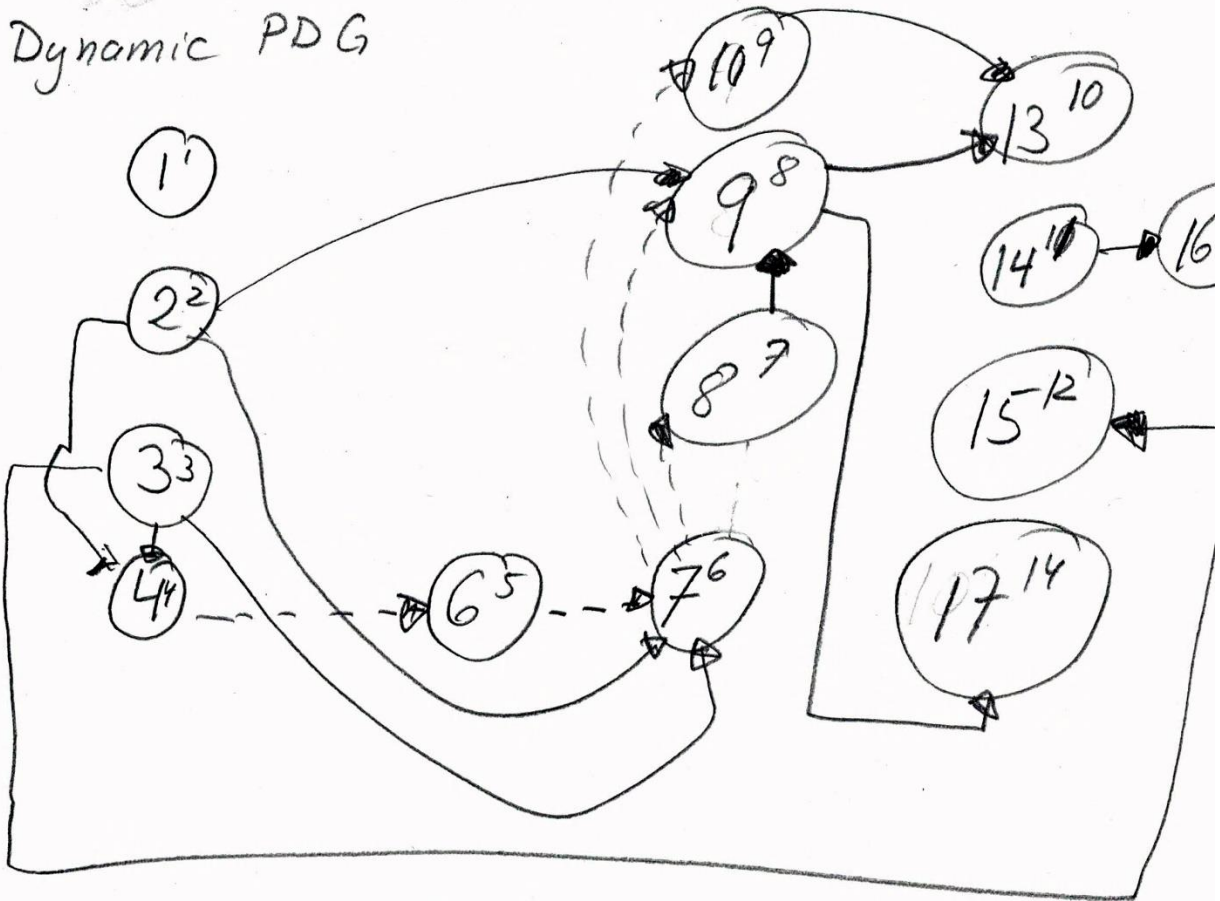
$S(\max, 16) = \{14, 16\}$   
 $S(\min, 15) = \{1, 2, 3, 4, 5, 15\}$   
 $S(\text{diff}, 17) = \{1, 2, 3, 4, 6, 7, 8, 9, 11, 12, 17\}$

#2

TRACE

1<sup>1</sup>, 2<sup>2</sup>, 3<sup>3</sup>, 4<sup>4</sup>, 6<sup>5</sup>, 7<sup>6</sup>, 8<sup>7</sup>, 9<sup>8</sup>, 10<sup>9</sup>, 13<sup>10</sup>, 14<sup>11</sup>, 15<sup>12</sup>, 16<sup>13</sup>, 17

Dynamic PDG



$$S(\text{max}, 16^{13}) = \{14, 16\}$$

$$S(\text{diff}, 17^{14}) = \{2, 3, 4, 6, 7, 8, 9, 17\}$$

$$S(\text{min}, 15^{12}) = \{3, 15\}$$

Question 3 Static forward slicing

S(diff,8) = {9,10,13,17}

Question 4 Dynamic forward slicing

	min	max	Diff
	{}	{}	{}
1. diff = 1;			
	{}	{}	{1}
2. cin >> max;			
	{}	{2}	{1}
3. cin >> min;			
	{3}	{2}	{1}
4. if (max < min)			
	{2,3,4}	{2,3,4}	{1,2,3,4}
6. else			
	{2,3,4,6}	{2,3,4,6}	{1,2,3,4,6}
{			
7. if (max == min)			
	{2,3,4,6,7}	{2,3,4,6,7}	{1,2,3,4,6,7}
{			
8. diff = 0;			
	{2,3,4,6,7}	{2,3,4,6,7}	{8}
9. diff = diff + max			
	{2,3,4,6,7}	{2,3,4,6,7}	{2,3,4,6,7,8,9}
10. max = diff - min			
	{2,3,4,6,7}	{2,3,4,6,7,8,9,10}	{2,3,4,6,7,8,9}
}			
	{2,3,4,6}	{2,3,4,6,7,8,9,10}	{2,3,4,6,7,8,9}
	{2,3,4}	{2,3,4,6,7,8,9,10}	{2,3,4,6,7,8,9}
}			
	{3}	{2,3,4,6,7,8,9,10}	{2,3,4,6,7,8,9}
13. max = diff+max;			
	{3}	{2,3,4,6,7,8,9,10,13}	{2,3,4,6,7,8,9}
14. cin >> max;			
	{3}	{14}	{2,3,4,6,7,8,9}
15. cout << min;			
	{3}	{14}	{2,3,4,6,7,8,9}
16. cout << max;			
	{3}	{14}	{2,3,4,6,7,8,9}
17. cout << diff;			
	{3}	{14}	{2,3,4,6,7,8,9}