Name: Harsh Parmar

Ex.1

Pre-condition: num $\in \mathbb{Z}^+$

Post-condition: Whether the number is a prime number or not a prime number is outputted.

num	prime	d	output
9			
	true		
		2	
	true		
		3	
	false		
		4	
			“is not prime”

Name: Harsh Parmar

Ex.2

Pre-condition: num $\in \mathbb{Z}$

Post-condition: Whether the sum of first 4 inputs is equal to sum of next 4 inputs or not is outputted.

sum1	sum2	i	num	output
0				
	0			
		1		
			12	
12				
		2		
			3	
15				
		3		
			3	
18				
		4		
			6	
24				
		1		
			11	
	11			
		2		
			14	
	25			
		3		
			1	
	26			
		4		
			1	
	27			
				“no”

Name: Harsh Parmar

Ex.3

Pre-condition: num $\in \mathbb{Z}$

Post-condition: The number of positive and negative numbers are calculated but not outputted.

p	n	num	output
0			
	0		
		12	
1			
		3	
1			
		-3	
	1		
		6	
1			
		-11	
	1		
		-14	
	1		
		-1	
	1		
		-1	
	1		
		-3	
	1		
		2	
1			

Name: Harsh Parmar

Ex.4

Pre-condition: num $\in \mathbb{Z}$

Post-condition: Whether the negative numbers in the first 4 inputs and positive numbers of last 4 numbers are equal or not is outputted.

cnt1	cnt2	i	num	output
0				
	0			
		1		
			12	
		2		
			3	
		3		
			-3	
1				
		4		
			6	
		1		
			11	
	1			
		2		
			3	
	2			
		3		
			-1	
		4		
			-1	
				“no”

Name: Harsh Parmar

Ex.5

Main Algorithm- Pre-condition: num $\in \mathbb{Z}^+$

Post-condition: Prime Numbers until that number are outputted.

num	i	output
6		
	2	
		2
	3	
		3
	4	
	5	
		5
	6	

Sub Algorithm- Pre-condition: num $\in \mathbb{Z}^+$

Post-condition: True or false is returned based on the input which verifies that it is a prime number or not.

num	flag	d	returned value
2			
	true		
		2	
			true
3			
	true		
		2	
			true
4			
	true		
		2	
	false		
		3	
			false
5			
	true		
		2	
		3	
			true
6			
	true		
		2	
	false		
		3	
			false

Name: Harsh Parmar

Ex.6

Main Algorithm- Pre-condition: num $\in \mathbb{Z}^+$

Post-condition: Prime Numbers that has 7 in it until that number are outputted.

n	i	output
10		
	2	
	3	
	4	
	5	
	6	
	7	
		7
	8	
	9	

Sub Algorithm- Pre-condition: num $\in \mathbb{Z}^+$

Post-condition: True or false is returned based on the input which verifies that it is a prime number or not.

n	flag	d	returned value
2			
	true		
		2	
			true
3			
	true		
		2	
			true
4			
	true		
		2	
	false		
		3	
			false
5		2	
	true		
		3	
			true
6			
	true		
		2	
	false		
		3	
			false

7		
	true	
		2
		3
		4
		true
8		
	true	
		2
	false	
		3
		false
9		
	true	
		2
	false	
		3
		false

Sub Algorithm- Pre-condition: num $\in \mathbb{Z}^+$

Post-condition: True or false is returned based on the input which verifies that input has a 7 or not.

n	flag	returned value
2		
	false	
		false
3		
	false	
		false
4		
	false	
		false
5		
	false	
		false
6		
	false	
		false
7		
	false	
		true
8		
	false	
		false
9		
	false	
		false