

1. Push(6), Push(4), Push(8), Pop(), Push(1), Push(9),
Pop(), Pop(), Push(2), Pop(), Pop()

Push(6):

	1 Top
6	0
	index

Push(1):

	3 Top
1	2
4	1
6	0
	index

Push(4):

	2 Top
4	1
6	0
	index

Push(9):

	4 Top
9	3
1	2
4	1
6	0
	index

Push(8):

	3 Top
8	2
4	1
6	0
	index

Pop():

	3 Top
1	2
4	1
6	0
	index

Pop():

	2 Top
4	1
6	0
	index

Pop():

	2 Top
4	1
6	0
	index

Push(2):

2
4
6

3 Top
2
1
0
index

Pop():

4
6

2 Top
1
0
index

Pop():

6

1 Top
0
index

2. Queue:

front
↓

			53	25	87	15	
0	1	2	3	4	5	6	7
						↑ rear	

Enqueue(5):

front
↓

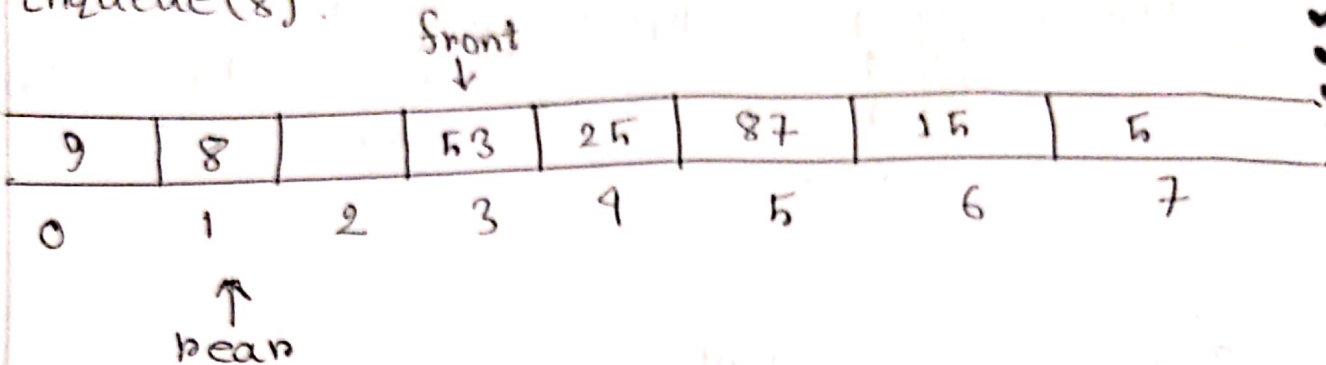
			53	25	87	15	5
0	1	2	3	4	5	6	7
							↑ rear

Enqueue(9):

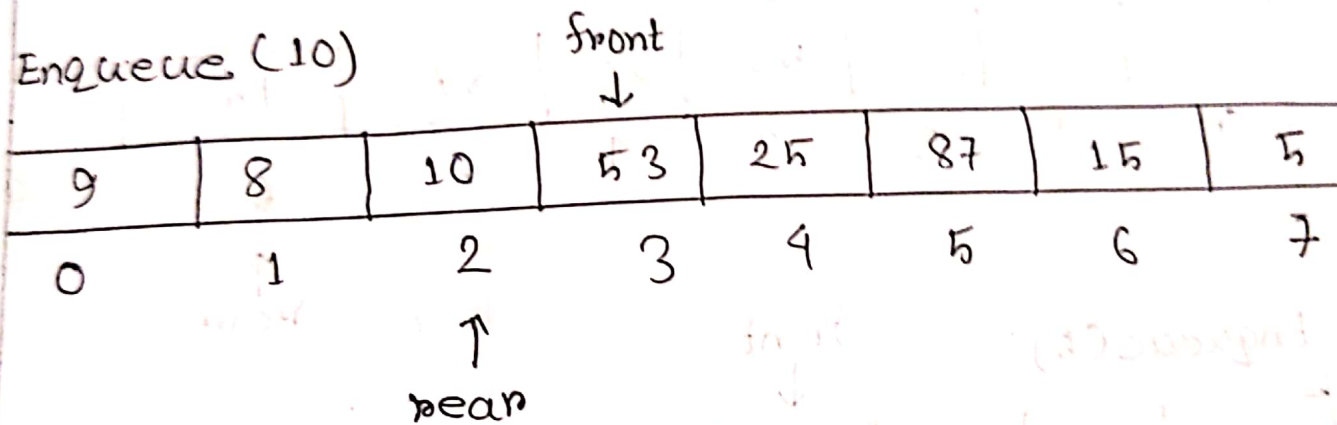
front
↓

9			53	25	87	15	5
0	1	2	3	4	5	6	7
↑ rear							

Enqueue(8):

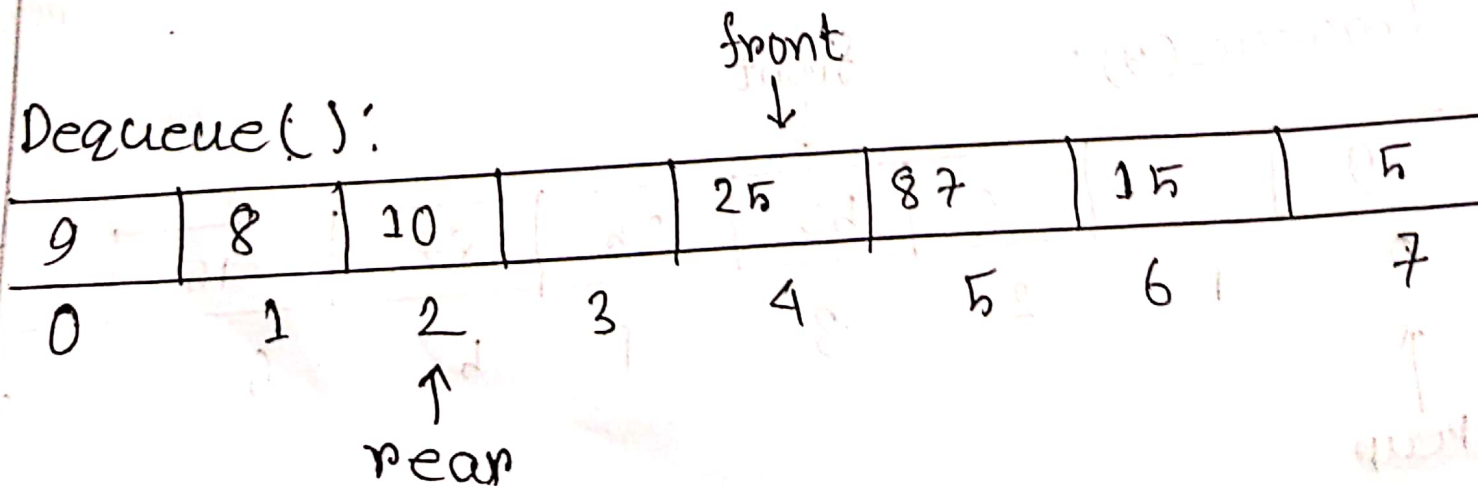


Enqueue(10)

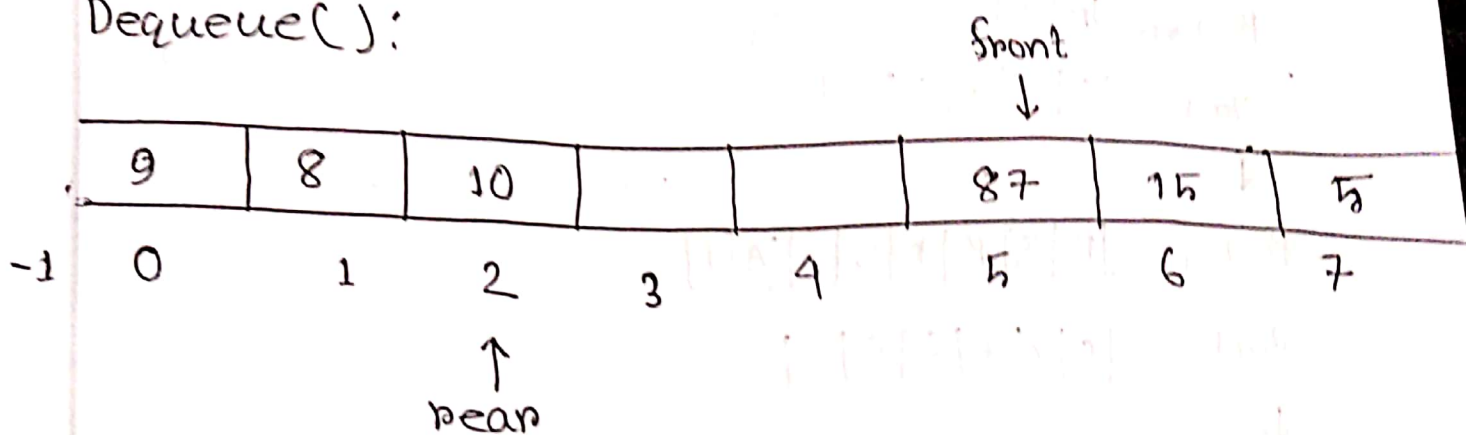


Enqueue(12): Enqueue operation is not possible.
Here, $\text{rear} = \text{front} - 1$, So, the queue is full.

Dequeue():



Dequeue():



3. Infix $P / \{ (Q * R) - S \} * \{ C A / F \} + T \}$

Postfix P

Stack $[]$

↓

Postfix P

Stack $[/]$

↓

Postfix P

Stack $[/ \{]$

↓

Postfix $P Q$

Stack $[/ \{ C]$

↓

Postfix $P Q R$

Stack $[/ \{ C *]$

Postfix $P Q R *$

Stack $[/ \{]$

↓

Postfix $P Q R * S$

Stack $[/ \{ -]$

↓

Postfix $P Q R * S -$

Stack $[/]$

↓

Postfix $P Q R * S -$

Stack $[/ *]$

↓

Postfix $P Q R * S -$

Stack $[/ * \{]$

Postfix

P	Q	R	*	S	-	A
---	---	---	---	---	---	---

Stack

C	/	*	{	C
---	---	---	---	---

↓

Postfix

P	Q	R	*	S	-	A	F
---	---	---	---	---	---	---	---

Stack

C	/	*	{	C	/
---	---	---	---	---	---

↓

Postfix

P	Q	R	*	S	-	A	F	/
---	---	---	---	---	---	---	---	---

Stack

C	/	*	{
---	---	---	---

↓

Postfix

P	Q	R	*	S	-	A	F	/	T
---	---	---	---	---	---	---	---	---	---

Stack

C	/	*	{	+
---	---	---	---	---

↓

Postfix

P	Q	R	*	S	-	A	F	/	T	+
---	---	---	---	---	---	---	---	---	---	---

Stack

C	/	*
---	---	---

↓

Postfix

P	Q	R	*	S	-	A	F	/	T	+	*
---	---	---	---	---	---	---	---	---	---	---	---

Stack

C	/
---	---

Postfix

P	Q	R	*	S	-	A	F	/	T	+	*	/
---	---	---	---	---	---	---	---	---	---	---	---	---

Stack

$$4. \quad 10 \quad 12 \quad 8 \quad - \quad * \quad 18 \quad 3 \quad / \quad + \quad 2 \quad /$$

$$\Downarrow$$

$$\begin{array}{r} 10 \quad 4 \quad * \quad 18 \quad 3 \quad / \quad + \quad 2 \quad / \\ \hline 40 \end{array}$$

$$\Downarrow$$

$$\begin{array}{r} 40 \quad 18 \quad 3 \quad / \quad + \quad 2 \quad / \\ \hline 6 \end{array}$$

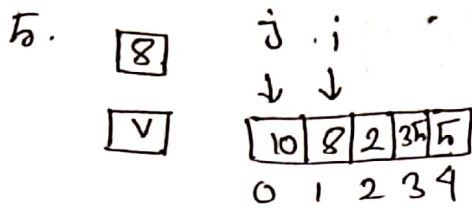
$$\Downarrow$$

$$\begin{array}{r} 40 \quad 6 \quad + \quad 2 \quad / \\ \hline 46 \end{array}$$

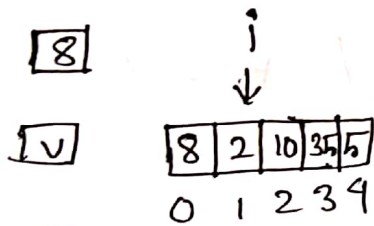
$$\Downarrow$$

$$\begin{array}{r} 46 \quad 2 \quad / \\ \hline 23 \end{array}$$

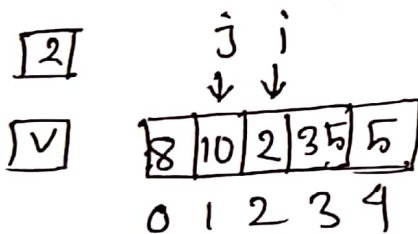
\therefore Value = 23 (Answer)



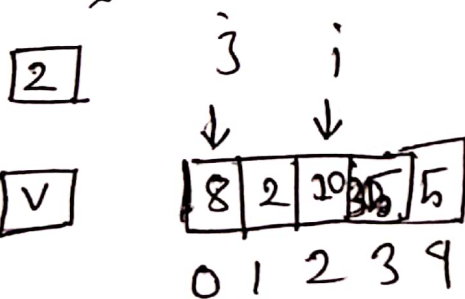
⇓



⇓



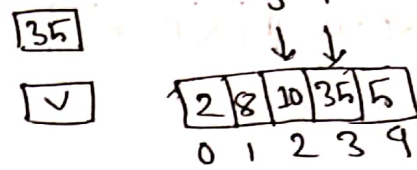
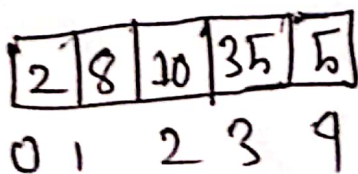
⇓



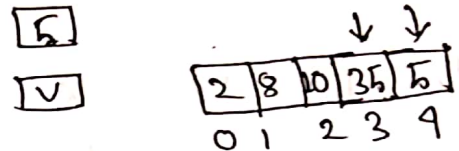
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[2]

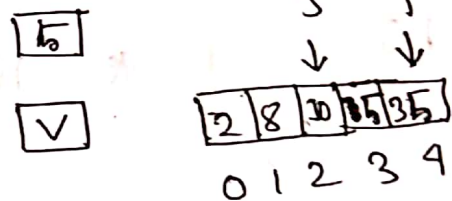
↓



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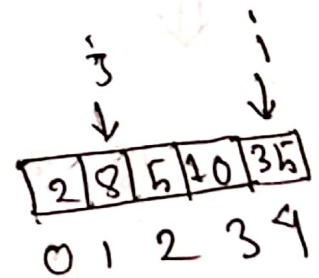
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⇓

[5]

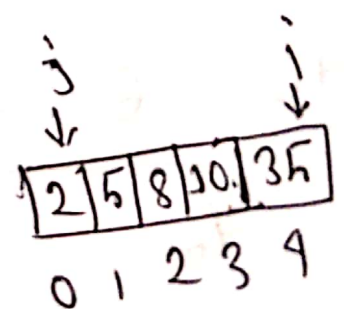
[V]



⇓

[5]

[V]



Sorted