



Find the rule the pattern is using.

Ex) 729 , 243 , 81 , 27 , 9 Rule = Divide 3

1) 8 , 16 , 32 , 64 , 128 Rule = _____

2) 1250 , 250 , 50 , 10 , 2 Rule = _____

3) 4 , 12 , 36 , 108 Rule = _____

4) 250 , 50 , 10 , 2 Rule = _____

5) 375 , 75 , 15 , 3 Rule = _____

6) 10 , 18 , 26 , 34 , 42 , 50 , 58 Rule = _____

7) 3 , 10 , 17 , 24 , 31 , 38 Rule = _____

8) 1 , 5 , 9 , 13 , 17 Rule = _____

9) 19 , 17 , 15 , 13 , 11 , 9 , 7 Rule = _____

10) 6 , 24 , 96 , 384 Rule = _____

11) 23 , 19 , 15 , 11 , 7 Rule = _____

12) 39 , 32 , 25 , 18 , 11 , 4 Rule = _____

13) 10 , 19 , 28 , 37 , 46 , 55 , 64 Rule = _____

14) 36 , 32 , 28 , 24 , 20 , 16 , 12 , 8 Rule = _____

15) 5 , 25 , 125 , 625 , 3125 Rule = _____

Answers

Ex. Divide 3

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____



Find the rule the pattern is using.

- Ex) 729 , 243 , 81 , 27 , 9 Rule = Divide 3
- 1) 8 , 16 , 32 , 64 , 128 Rule = Multiply 2
- 2) 1250 , 250 , 50 , 10 , 2 Rule = Divide 5
- 3) 4 , 12 , 36 , 108 Rule = Multiply 3
- 4) 250 , 50 , 10 , 2 Rule = Divide 5
- 5) 375 , 75 , 15 , 3 Rule = Divide 5
- 6) 10 , 18 , 26 , 34 , 42 , 50 , 58 Rule = Add 8
- 7) 3 , 10 , 17 , 24 , 31 , 38 Rule = Add 7
- 8) 1 , 5 , 9 , 13 , 17 Rule = Add 4
- 9) 19 , 17 , 15 , 13 , 11 , 9 , 7 Rule = Subtract 2
- 10) 6 , 24 , 96 , 384 Rule = Multiply 4
- 11) 23 , 19 , 15 , 11 , 7 Rule = Subtract 4
- 12) 39 , 32 , 25 , 18 , 11 , 4 Rule = Subtract 7
- 13) 10 , 19 , 28 , 37 , 46 , 55 , 64 Rule = Add 9
- 14) 36 , 32 , 28 , 24 , 20 , 16 , 12 , 8 Rule = Subtract 4
- 15) 5 , 25 , 125 , 625 , 3125 Rule = Multiply 5

Answers

- Ex. Divide 3
1. Multiply 2
2. Divide 5
3. Multiply 3
4. Divide 5
5. Divide 5
6. Add 8
7. Add 7
8. Add 4
9. Subtract 2
10. Multiply 4
11. Subtract 4
12. Subtract 7
13. Add 9
14. Subtract 4
15. Multiply 5



Determine the number that correctly fills in the blank in the function machine.

1)

Input	Output
94	99
85	
16	21
75	80
62	67

2)

Input	Output
3	27
8	72
9	81
5	45
4	

3)

Input	Output
43	55
75	87
62	74
77	
64	76

4)

Input	Output
	19
95	96
36	37
82	83
89	90

5)

Input	Output
25	12
85	72
57	44
62	49
	30

6)

Input	Output
24	3
	2
72	9
56	7
32	4

7)

In	4	5	9		8
Out	20	25	45	10	40

8)

In	3		9	4	6
Out	12	40	36	16	24

9)

In	56	21		42	63
Out	8	3	2	6	9

10)

In	2	4	5	8	9
Out	4	8		16	18

11)

In	12	24	48	54	30
Out	2	4	8	9	

12)

In	60	81	62	32	15
Out	57	78		29	12

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____



Determine the number that correctly fills in the blank in the function machine.

1)

Input	Output
94	99
85	90
16	21
75	80
62	67

Rule: Add 5

2)

Input	Output
3	27
8	72
9	81
5	45
4	36

Rule: Mult 9

3)

Input	Output
43	55
75	87
62	74
77	89
64	76

Rule: Add 12

4)

Input	Output
18	19
95	96
36	37
82	83
89	90

Rule: Add 1

5)

Input	Output
25	12
85	72
57	44
62	49
43	30

Rule: Sub 13

6)

Input	Output
24	3
16	2
72	9
56	7
32	4

Rule: Div 8

7)

In	4	5	9	2	8
Out	20	25	45	10	40

Rule: Mult 5

8)

In	3	10	9	4	6
Out	12	40	36	16	24

Rule: Mult 4

9)

In	56	21	14	42	63
Out	8	3	2	6	9

Rule: Div 7

10)

In	2	4	5	8	9
Out	4	8	10	16	18

Rule: Mult 2

11)

In	12	24	48	54	30
Out	2	4	8	9	5

Rule: Div 6

12)

In	60	81	62	32	15
Out	57	78	59	29	12

Rule: Sub 3

Answers

1. 90

2. 36

3. 89

4. 18

5. 43

6. 16

7. 2

8. 10

9. 14

10. 10

11. 5

12. 59



Determine the number that correctly fills in the blank in the function machine.

5	14	10	89	36	59
90	18	2	43	10	16

1)

Input	Output
94	99
85	
16	21
75	80
62	67

2)

Input	Output
3	27
8	72
9	81
5	45
4	

3)

Input	Output
43	55
75	87
62	74
77	
64	76

4)

Input	Output
	19
95	96
36	37
82	83
89	90

5)

Input	Output
25	12
85	72
57	44
62	49
	30

6)

Input	Output
24	3
	2
72	9
56	7
32	4

7)

In	4	5	9		8
Out	20	25	45	10	40

8)

In	3		9	4	6
Out	12	40	36	16	24

9)

In	56	21		42	63
Out	8	3	2	6	9

10)

In	2	4	5	8	9
Out	4	8		16	18

11)

In	12	24	48	54	30
Out	2	4	8	9	

12)

In	60	81	62	32	15
Out	57	78		29	12

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____



Determine what rule the function machine is using.

Answers

1)

In	Out
22	36
33	47
41	55
47	61
50	64

2)

Input	Output
15	10
20	15
38	33
40	35
41	36

3)

Input	Output
33	28
45	40
45	40
46	41
55	50

4)

Input	Output
13	21
17	25
20	28
38	46
41	49

5)

Input	Output
10	19
19	28
30	39
33	42
43	52

6)

Input	Output
28	20
30	22
40	32
41	33
43	35

7)

In	Out
15	30
31	46
39	54
45	60
50	65

8)

Input	Output
37	29
38	30
44	36
48	40
56	48

9)

In	Out
22	18
28	24
29	25
33	29
38	34

10)

In	Out
32	19
34	21
41	28
43	30
46	33

11)

In	Out
11	17
22	28
34	40
37	43
42	48

12)

In	Out
10	19
12	21
12	21
26	35
50	59

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____



Determine what rule the function machine is using.

1)

In	Out
22	36
33	47
41	55
47	61
50	64

2)

Input	Output
15	10
20	15
38	33
40	35
41	36

3)

Input	Output
33	28
45	40
45	40
46	41
55	50

4)

Input	Output
13	21
17	25
20	28
38	46
41	49

5)

Input	Output
10	19
19	28
30	39
33	42
43	52

6)

Input	Output
28	20
30	22
40	32
41	33
43	35

7)

In	Out
15	30
31	46
39	54
45	60
50	65

8)

Input	Output
37	29
38	30
44	36
48	40
56	48

9)

In	Out
22	18
28	24
29	25
33	29
38	34

10)

In	Out
32	19
34	21
41	28
43	30
46	33

11)

In	Out
11	17
22	28
34	40
37	43
42	48

12)

In	Out
10	19
12	21
12	21
26	35
50	59

Answers

1. **Add 14**

2. **Sub 5**

3. **Sub 5**

4. **Add 8**

5. **Add 9**

6. **Sub 8**

7. **Add 15**

8. **Sub 8**

9. **Sub 4**

10. **Sub 13**

11. **Add 6**

12. **Add 9**



Determine what rule the function machine is using.

1)

In	Out
22	36
33	47
41	55
47	61
50	64

- Sub 15
- Sub 14
- Add 11
- Add 14

2)

Input	Output
15	10
20	15
38	33
40	35
41	36

- Add 6
- Sub 6
- Add 5
- Sub 5

3)

Input	Output
33	28
45	40
45	40
46	41
55	50

- Sub 4
- Add 8
- Sub 8
- Sub 5

4)

Input	Output
13	21
17	25
20	28
38	46
41	49

- Add 11
- Sub 11
- Add 8
- Add 5

5)

Input	Output
10	19
19	28
30	39
33	42
43	52

- Sub 9
- Sub 10
- Add 9
- Add 10

6)

Input	Output
28	20
30	22
40	32
41	33
43	35

- Sub 8
- Add 8
- Sub 7
- Add 9

7)

In	Out
15	30
31	46
39	54
45	60
50	65

- Add 15
- Sub 15
- Add 18
- Sub 18

8)

Input	Output
37	29
38	30
44	36
48	40
56	48

- Sub 5
- Add 8
- Sub 8
- Add 11

9)

In	Out
22	18
28	24
29	25
33	29
38	34

- Sub 2
- Add 4
- Sub 4
- Add 5

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

Name : _____

Score : _____

Teacher : _____

Date : _____

In and Out Boxes

Fill in the Empty Boxes.

1)

In	Out
11	
14	
16	
19	

2)

In	Out
4	
10	
15	
18	

3)

In	Out
1	
3	
5	
8	

4)

In	Out
0	
3	
11	
15	

Rule: Subtract 4

Rule: Subtract 4

Rule: Subtract 1

Rule: Add 5

5)

In	4	5	6	16
Out				

Rule: Subtract 2

6)

In	1	7	9	11
Out				

Rule: Add 5

7)

In	1	3	9	12
Out				

Rule: Add 4

8)

In	8	10	13	14
Out				

Rule: Add 1

Write the rule and fill in the empty boxes.

9)

In	Out
6	
10	9
11	10
16	15

Rule: _____

10)

In	Out
1	3
5	
8	10
11	13

Rule: _____

11)

In	Out
4	9
5	10
6	11
7	

Rule: _____

12)

In	Out
4	
10	7
13	10
16	13

Rule: _____

13)

In	3	11	13	15
Out		9	11	13

Rule: _____

14)

In	2	6	13	14
Out		9	16	17

Rule: _____



Name : _____

Score : _____

Teacher : _____

Date : _____

In and Out Boxes

Fill in the Empty Boxes.

1)

In	Out
11	7
14	10
16	12
19	15

Rule: Subtract 4

2)

In	Out
4	0
10	6
15	11
18	14

Rule: Subtract 4

3)

In	Out
1	0
3	2
5	4
8	7

Rule: Subtract 1

4)

In	Out
0	5
3	8
11	16
15	20

Rule: Add 5

5)

In	4	5	6	16
Out	2	3	4	14

Rule: Subtract 2

6)

In	1	7	9	11
Out	6	12	14	16

Rule: Add 5

7)

In	1	3	9	12
Out	5	7	13	16

Rule: Add 4

8)

In	8	10	13	14
Out	9	11	14	15

Rule: Add 1

Write the rule and fill in the empty boxes.

9)

In	Out
6	5
10	9
11	10
16	15

Rule: Subtract 1

10)

In	Out
1	3
5	7
8	10
11	13

Rule: Add 2

11)

In	Out
4	9
5	10
6	11
7	12

Rule: Add 5

12)

In	Out
4	1
10	7
13	10
16	13

Rule: Subtract 3

13)

In	3	11	13	15
Out	1	9	11	13

Rule: Subtract 2

14)

In	2	6	13	14
Out	5	9	16	17

Rule: Add 3



Name : _____

Score : _____

Teacher : _____

Date : _____

In and Out Boxes

Fill in the Empty Boxes.

1)

In	Out
0	
6	
10	
16	

Rule: Divide 2

2)

In	Out
2	
5	
7	
10	

Rule: Multiply 5

3)

In	Out
12	
16	
24	
32	

Rule: Divide 4

4)

In	Out
4	
8	
24	
36	

Rule: Divide 4

5)

In	0	5	15	20
Out				

Rule: Divide 5

6)

In	3	5	6	10
Out				

Rule: Multiply 2

7)

In	0	2	7	9
Out				

Rule: Multiply 3

8)

In	1	7	9	10
Out				

Rule: Multiply 3

Write the rule and fill in the empty boxes.

9)

In	Out
5	
6	12
9	18
10	20

Rule: _____

10)

In	Out
0	0
8	
12	3
36	9

Rule: _____

11)

In	Out
9	3
15	5
27	
30	10

Rule: _____

12)

In	Out
0	0
2	10
4	20
10	

Rule: _____

13)

In	4	8	10	14
Out	2	4	5	

Rule: _____

14)

In	0	2	4	10
Out	0	8	16	

Rule: _____



Name : _____

Score : _____

Teacher : _____

Date : _____

In and Out Boxes

Fill in the Empty Boxes.

1)

In	Out
0	0
6	3
10	5
16	8

Rule: Divide 2

2)

In	Out
2	10
5	25
7	35
10	50

Rule: Multiply 5

3)

In	Out
12	3
16	4
24	6
32	8

Rule: Divide 4

4)

In	Out
4	1
8	2
24	6
36	9

Rule: Divide 4

5)

In	0	5	15	20
Out	0	1	3	4

Rule: Divide 5

6)

In	3	5	6	10
Out	6	10	12	20

Rule: Multiply 2

7)

In	0	2	7	9
Out	0	6	21	27

Rule: Multiply 3

8)

In	1	7	9	10
Out	3	21	27	30

Rule: Multiply 3

Write the rule and fill in the empty boxes.

9)

In	Out
5	10
6	12
9	18
10	20

Rule: Multiply 2

10)

In	Out
0	0
8	2
12	3
36	9

Rule: Divide 4

11)

In	Out
9	3
15	5
27	9
30	10

Rule: Divide 3

12)

In	Out
0	0
2	10
4	20
10	50

Rule: Multiply 5

13)

In	4	8	10	14
Out	2	4	5	7

Rule: Divide 2

14)

In	0	2	4	10
Out	0	8	16	40

Rule: Multiply 4

