

Number Patterns

Make each pattern from its rule. Then find the rule.

Use the start number and the rule to make the pattern.

Example

Start at 9.
Add 6.



1. Start at 40.
Add 25.



2. Start at 1,250.
Subtract 150.



3. Start at 4.
Multiply by 3.



4. Start at 60.
Add 125.



Write the rule. Then write the next two numbers.

Example



1. 3,000 2,750 2,500 2,250 Rule: _____

2. 11 22 44 88 Rule: _____

3. 11 30 49 68 Rule: _____

Number Patterns

Find the rule. Then write the missing numbers.

Example

Rule: Add 48

48

96

144

192

240

288

1.

Rule: _____

5,000

4,875

4,500

2.

Rule: _____

3

48

768

3.

Rule: _____

64

98

149

4.

Rule: _____

1,440

360

90

5.

Rule: _____

52

87

157

6.

Rule: _____

999

851

703

7.

Rule: _____

6

30

750

Number Patterns

Make each pattern. Find a pattern the rule does not say.

Example

Start at 1. Add 3. Write O (odd) or E (even) under each number.

1	4	7	10	13	16	19	22	25	28
O	E	O	E	O	E	O	E	O	E

The numbers go: odd, even, odd, even all odd all even

Why? Adding 3, an odd number, turns odd into even and even into odd.

1. Start at 26. Add 14. Write O (odd) or E (even) under each number.

26							

The numbers go: odd, even, odd, even all odd all even

Why? _____

2. Start at 47. Add 20.

47							
----	--	--	--	--	--	--	--

Every number ends in ____.

Every number is odd even Why? _____

3. Start at 7. Multiply by 3.

7						
---	--	--	--	--	--	--

The ones digits go 7, 1, ____, ____, then ____ again.

Every number is odd even Why? _____

Number Patterns

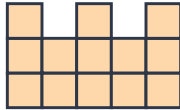
Use the rule and the table to find later steps.

Example

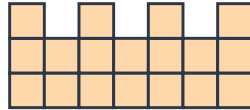
Rule: start with 8 tiles, then add 5 tiles each step.



Step 1



Step 2



Step 3

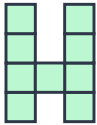
Step	1	2	3	4	5	6
Tiles	8	13	18	23	28	33

Step 10 has 53 tiles.

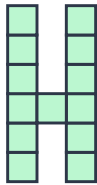
Step 13 has 68 tiles.

The numbers of tiles go: odd, even, odd, even all odd all even

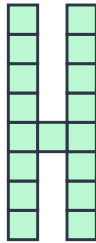
1. Rule: start with 9 tiles, then add 4 tiles each step.



Step 1



Step 2



Step 3

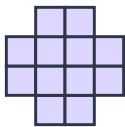
Step	1	2	3	4	5	6
Tiles						

Step 10 has _____ tiles.

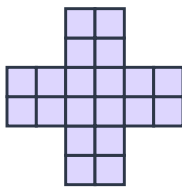
Step _____ has 65 tiles.

Can a step have 100 tiles? Yes No Why? _____

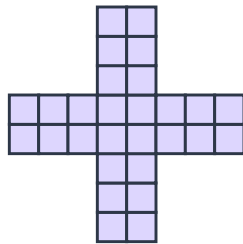
2. Rule: start with 12 tiles, then add 8 tiles each step.



Step 1



Step 2



Step 3

Step	1	2	3	4	5	6
Tiles						

Step 10 has _____ tiles.

Step _____ has 100 tiles.

Can a step have 150 tiles? Yes No Why? _____

Number Patterns

Fill in each table. Use the pattern to answer.

Example Ana has 35 stickers in week 1. Every week after that she adds 15 more.

Week	1	2	3	4	5	6
Stickers	35	50	65	80	95	110

Week 10: 170 stickers

Each number ends in 5 or 0.

Will she ever have exactly 200 stickers? **Yes** No In week 12.

1. A candle is 240 mm tall. It burns down 15 mm every hour.

Hour	0	1	2	3	4	5
mm tall	240					

After 10 hours: _____ mm

It is 120 mm after _____ hours.

Will it ever be 100 mm tall? Yes No Why? _____

2. A theater has 32 seats in row 1. Each row has 6 more seats than the row in front of it.

Row	1	2	3	4	5	6
Seats	32					

Row 12: _____ seats

Row _____ has 92 seats.

Can a row have 75 seats? Yes No Why? _____

3. A chess club has 7 members in month 1. Each month the number of members doubles.

Month	1	2	3	4	5	6
Members	7					

Month 8: _____ members

First month past 1,000: _____

Is every later month even? Yes No Why? _____

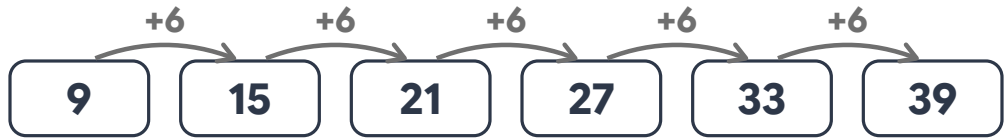
Number Patterns

Make each pattern from its rule. Then find the rule.

Use the start number and the rule to make the pattern.

Example

Start at 9.
Add 6.



1. Start at 40.
Add 25.

40

2. Start at 1,250.
Subtract 150.

1,250

3. Start at 4.
Multiply by 3.

4

4. Start at 60.
Add 125.

60

Write the rule. Then write the next two numbers.

Example

36 72 108 144 180 216 Rule: Add 36

1. 3,000 2,750 2,500 2,250 Rule: _____

2. 11 22 44 88 Rule: _____

3. 11 30 49 68 Rule: _____

Number Patterns

Find the rule. Then write the missing numbers.

Example

Rule: Add 48

48

96

144

192

240

288

1.

Rule: _____

5,000

4,875

4,500

2.

Rule: _____

3

48

768

3.

Rule: _____

64

98

149

4.

Rule: _____

1,440

360

90

5.

Rule: _____

52

87

157

6.

Rule: _____

999

851

703

7.

Rule: _____

6

30

750

Number Patterns

Make each pattern. Find a pattern the rule does not say.

Example

Start at 1. Add 3. Write O (odd) or E (even) under each number.

1	4	7	10	13	16	19	22	25	28
O	E	O	E	O	E	O	E	O	E

The numbers go: odd, even, odd, even all odd all even

Why? Adding 3, an odd number, turns odd into even and even into odd.

1. Start at 26. Add 14. Write O (odd) or E (even) under each number.

26							

The numbers go: odd, even, odd, even all odd all even

Why? _____

2. Start at 47. Add 20.

47							
----	--	--	--	--	--	--	--

Every number ends in ____.

Every number is odd even Why? _____

3. Start at 7. Multiply by 3.

7						
---	--	--	--	--	--	--

The ones digits go 7, 1, ____, ____, then ____ again.

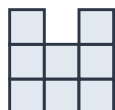
Every number is odd even Why? _____

Number Patterns

Use the rule and the table to find later steps.

Example

Rule: start with 8 tiles, then add 5 tiles each step.



Step 1



Step 2



Step 3

Step	1	2	3	4	5	6
Tiles	8	13	18	23	28	33

Step 10 has 53 tiles.

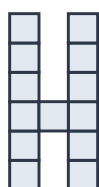
Step 13 has 68 tiles.

The numbers of tiles go: odd, even, odd, even all odd all even

1. Rule: start with 9 tiles, then add 4 tiles each step.



Step 1



Step 2



Step 3

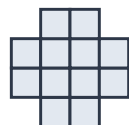
Step	1	2	3	4	5	6
Tiles						

Step 10 has _____ tiles.

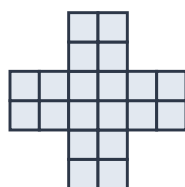
Step _____ has 65 tiles.

Can a step have 100 tiles? Yes No Why? _____

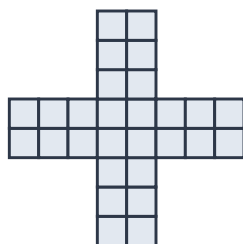
2. Rule: start with 12 tiles, then add 8 tiles each step.



Step 1



Step 2



Step 3

Step	1	2	3	4	5	6
Tiles						

Step 10 has _____ tiles.

Step _____ has 100 tiles.

Can a step have 150 tiles? Yes No Why? _____

Number Patterns

Fill in each table. Use the pattern to answer.

Example

Ana has 35 stickers in week 1. Every week after that she adds 15 more.

Week	1	2	3	4	5	6
Stickers	35	50	65	80	95	110

Week 10: 170 stickers

Each number ends in 5 or 0.

Will she ever have exactly 200 stickers?

Yes

No

In week 12.

1.

A candle is 240 mm tall. It burns down 15 mm every hour.

Hour	0	1	2	3	4	5
mm tall	240					

After 10 hours: mm

It is 120 mm after hours.

Will it ever be 100 mm tall?

Yes

No

Why?

2.

A theater has 32 seats in row 1. Each row has 6 more seats than the row in front of it.

Row	1	2	3	4	5	6
Seats	32					

Row 12: seats

Row has 92 seats.

Can a row have 75 seats?

Yes

No

Why?

3.

A chess club has 7 members in month 1. Each month the number of members doubles.

Month	1	2	3	4	5	6
Members	7					

Month 8: members

First month past 1,000:

Is every later month even?

Yes

No

Why?

Number Patterns

Make each pattern from its rule. Then find the rule.

Use the start number and the rule to make the pattern.

Example

Start at 9.
Add 6.



1. Start at 40.
Add 25.



2. Start at 1,250.
Subtract 150.



3. Start at 4.
Multiply by 3.



4. Start at 60.
Add 125.



Write the rule. Then write the next two numbers.

Example



1. 3,000 2,750 2,500 2,250 2,000 1,750 Rule: Subtract 250

2. 11 22 44 88 176 352 Rule: Multiply by 2

3. 11 30 49 68 87 106 Rule: Add 19

Number Patterns

Find the rule. Then write the missing numbers.

Example

Rule: Add 48

48

96

144

192

240

288

1.

Rule: Subtract 125

5,000

4,875

4,750

4,625

4,500

4,375

2.

Rule: Multiply by 4

3

12

48

192

768

3,072

3.

Rule: Add 17

64

81

98

115

132

149

4.

Rule: Divide by 2

1,440

720

360

180

90

45

5.

Rule: Add 35

17

52

87

122

157

192

6.

Rule: Subtract 74

999

925

851

777

703

629

7.

Rule: Multiply by 5

6

30

150

750

3,750

18,750

Number Patterns

Make each pattern. Find a pattern the rule does not say.

Example Start at 1. Add 3. Write O (odd) or E (even) under each number.

1	4	7	10	13	16	19	22	25	28
O	E	O	E	O	E	O	E	O	E

The numbers go: odd, even, odd, even all odd all even

Why? Adding 3, an odd number, turns odd into even and even into odd.

1. Start at 26. Add 14. Write O (odd) or E (even) under each number.

26	40	54	68	82	96	110	124
E	E	E	E	E	E	E	E

The numbers go: odd, even, odd, even all odd all even

Why? 26 is even, and even + even is always even.

2. Start at 47. Add 20.

47	67	87	107	127	147	167	187
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Every number ends in 7.

Every number is odd even Why? Each one ends in 7, so each one is odd.

3. Start at 7. Multiply by 3.

7	21	63	189	567	1,701	5,103
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The ones digits go 7, 1, 3, 9, then 7 again.

Every number is odd even Why? 7 is odd, and odd $\times$ odd is odd.

Number Patterns

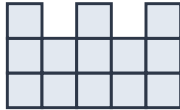
Use the rule and the table to find later steps.

Example

Rule: start with 8 tiles, then add 5 tiles each step.



Step 1



Step 2



Step 3

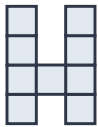
Step	1	2	3	4	5	6
Tiles	8	13	18	23	28	33

Step 10 has 53 tiles.

Step 13 has 68 tiles.

The numbers of tiles go: odd, even, odd, even all odd all even

1. Rule: start with 9 tiles, then add 4 tiles each step.



Step 1



Step 2



Step 3

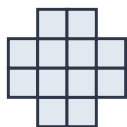
Step	1	2	3	4	5	6
Tiles	9	13	17	21	25	29

Step 10 has 45 tiles.

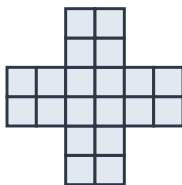
Step 15 has 65 tiles.

Can a step have 100 tiles? Yes No Why? Every step is odd, and 100 is even.

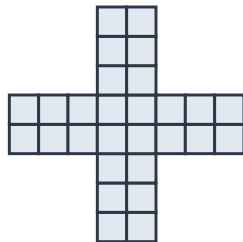
2. Rule: start with 12 tiles, then add 8 tiles each step.



Step 1



Step 2



Step 3

Step	1	2	3	4	5	6
Tiles	12	20	28	36	44	52

Step 10 has 84 tiles.

Step 12 has 100 tiles.

Can a step have 150 tiles? Yes No Why? 150 is not a multiple of 4.

Number Patterns

Fill in each table. Use the pattern to answer.

Example Ana has 35 stickers in week 1. Every week after that she adds 15 more.

Week	1	2	3	4	5	6
Stickers	35	50	65	80	95	110

Week 10: 170 stickers

Each number ends in 5 or 0.

Will she ever have exactly 200 stickers? **Yes** No In week 12.

1. A candle is 240 mm tall. It burns down 15 mm every hour.

Hour	0	1	2	3	4	5
mm tall	240	225	210	195	180	165

After 10 hours: 90 mm

It is 120 mm after 8 hours.

Will it ever be 100 mm tall? Yes **No** Why? It goes from 105 mm to 90 mm.

2. A theater has 32 seats in row 1. Each row has 6 more seats than the row in front of it.

Row	1	2	3	4	5	6
Seats	32	38	44	50	56	62

Row 12: 98 seats

Row 11 has 92 seats.

Can a row have 75 seats? Yes **No** Why? Every row is even; 75 is odd.

3. A chess club has 7 members in month 1. Each month the number of members doubles.

Month	1	2	3	4	5	6
Members	7	14	28	56	112	224

Month 8: 896 members

First month past 1,000: 9

Is every later month even? **Yes** No Why? Doubles are always even.