



**THIRD SPACE
LEARNING**

Number Patterns Worksheet

Algebra

Grades 4 to 5

Skill Questions

Name:

Date:

- 1 Starting number: 11
Rule: Add 9

What are the first five terms of the pattern?

Answer

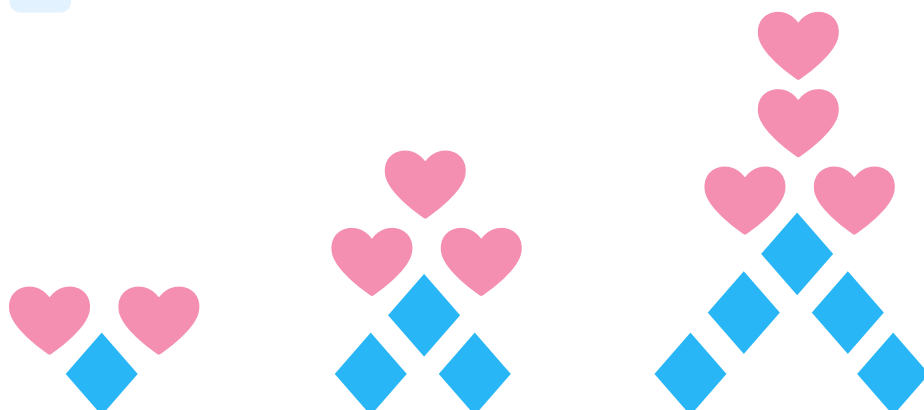
- 2 The rule for the table is multiply by 4. Complete the table.

Input	Output
4	
11	
15	
8	

- 3 What is the next number in the pattern?
80, 72, 64, 56, ____

Answer

- 4 Draw the next term in the pattern.



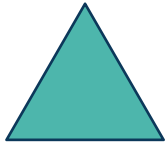
Number Patterns Worksheet | Grades 4 to 5

5 What is the next number in the pattern?

7, 18, 29, 40, ____

Answer

6



The four shapes above repeat over and over in a pattern.

What is the 100th term?

Answer

7 Show the first four terms of each pattern.

Pattern A: Start at 0, add 4

____, ____, ____, ____

Pattern B: Start at 0, add 8

____, ____, ____, ____

8 Complete the sentence to compare the patterns in question 7.

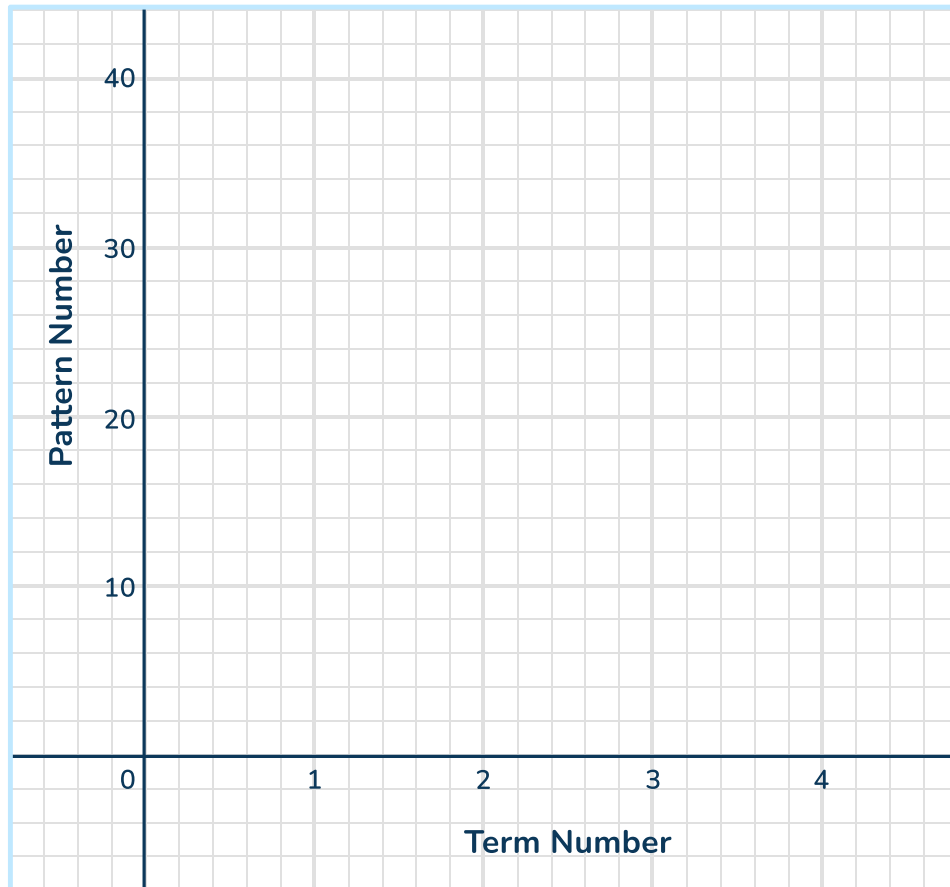
The terms in Pattern B are always ____ times the terms in Pattern A.

Number Patterns Worksheet | Grades 4 to 5

9 Graph each pattern on the coordinate grid.

Pattern A: 9, 18, 27, 36

Pattern B: 0, 9, 18, 27



10

Pattern A

Input	2	3	4	5
Output	10	15	20	25

Pattern B

Input	2	3	4	5
Output	30	45	60	75

Write one statement about the terms in Pattern A and Pattern B.

Applied Questions

- 11** Josie started with 18 coins in her collection. Each week she added 7 more coins. How many weeks will it take Josie to have 100 coins in her collection?

Answer

- 12** In art class, the total colored pencils needed is 8 times the number of students. Complete the table to show how many colored pencils are needed for different numbers of students.

Number of Students	Total Colored Pencils Needed
4	
11	
15	
8	

- 13** Blaire is making a necklace with beads. She adds a yellow bead, an orange bead and then a blue bead. Then she repeats the same bead pattern over and over again. What color will the 50th bead be? Explain.

- 14** Grant and Mieko started a game with 45 coins each. Grant uses 9 coins each level. Mieko uses 3 coins each level. Complete the tables to show how many coins Grant and Mieko have at the end of some levels.

Grant

Level (at the end)	1	2	5
Coins			

Mieko

Level (at the end)	1	2	5
Coins			

- 15** Pattern A: 0, 3, 6, 9...

Pattern B's terms...

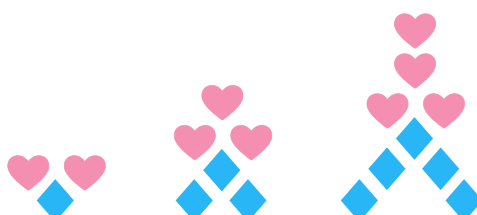
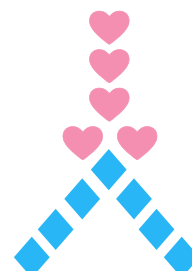
- Are more than double but less than triple the terms in Pattern A
- Alternate between even and odd
- Are multiplied by the same whole number each time

What are the first four terms of Pattern B?

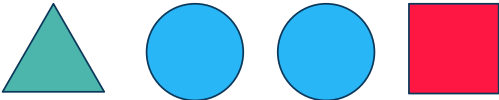

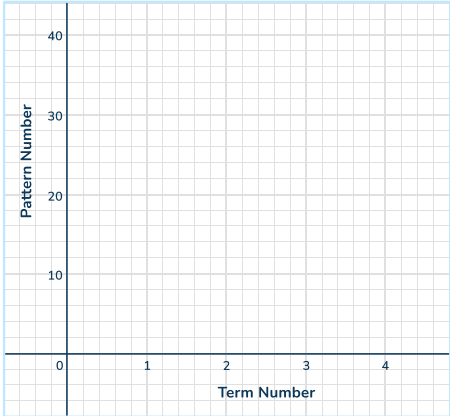
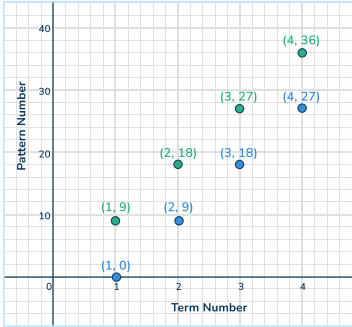
____, ____, ____, ____

Answer

Answers

Question number	Question	Answers	Standard																				
1	Starting number: 11 Rule: Add 9 What are the first five terms of the pattern?	11, 20, 29, 38, 47	4.OA.C.5																				
2	The rule for the table is multiply by 4. Complete the table. <table><tr><th>Input</th><th>Output</th></tr><tr><td>4</td><td></td></tr><tr><td>11</td><td></td></tr><tr><td>15</td><td></td></tr><tr><td>8</td><td></td></tr></table>	Input	Output	4		11		15		8		<table><tr><th>Input</th><th>Output</th></tr><tr><td>4</td><td>16</td></tr><tr><td>11</td><td>44</td></tr><tr><td>15</td><td>60</td></tr><tr><td>8</td><td>32</td></tr></table>	Input	Output	4	16	11	44	15	60	8	32	4.OA.C.5
Input	Output																						
4																							
11																							
15																							
8																							
Input	Output																						
4	16																						
11	44																						
15	60																						
8	32																						
3	What is the next number in the pattern? 80, 72, 64, 56, ____	48	4.OA.C.5																				
4	Draw the next term in the pattern. 		4.OA.C.5																				
5	What is the next number in the pattern? 7, 18, 29, 40, ____	51	4.OA.C.5																				

Number Patterns Worksheet | Grades 4 to 5 | Answers

Question number	Question	Answers	Standard
6	 <p>The four shapes above repeat over and over in a pattern.</p> <p>What is the 100th term?</p>	 <p>(Possible strategy: There are 4 terms, $100 \div 4 = 25$, no remainders, so the last shape of 100 is the red square.)</p>	4.OA.C.5
7	<p>Show the first four terms of each pattern.</p> <p>Pattern A: Start at 0, add 4</p> <p>____, ____, ____, ____</p> <p>Pattern B: Start at 0, add 8</p> <p>____, ____, ____, ____</p>	<p>Pattern A: 0, 4, 8, 12</p> <p>Pattern B: 0, 8, 16, 24</p>	5.OA.B.C
8	<p>Complete the sentence to compare the patterns in question 7.</p> <p>The terms in Pattern B are always ____ times the terms in Pattern A.</p>	two	5.OA.B.C
9	<p>Graph each pattern on the coordinate grid.</p> <p>Pattern A: 9, 18, 27, 36</p> <p>Pattern B: 0, 9, 18, 27</p> 		5.OA.B.C

Number Patterns Worksheet | Grades 4 to 5 | Answers

Question number	Question	Answers	Standard																				
10	<p>Pattern A</p> <table><tr><td>Input</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>Output</td><td>10</td><td>15</td><td>20</td><td>25</td></tr></table> <p>Pattern B</p> <table><tr><td>Input</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>Output</td><td>30</td><td>45</td><td>60</td><td>75</td></tr></table> <p>Write one statement about the terms in Pattern A and Pattern B.</p>	Input	2	3	4	5	Output	10	15	20	25	Input	2	3	4	5	Output	30	45	60	75	Answers may vary. Example answers: The outputs in Pattern B are always 3 times the outputs of Pattern A. OR The outputs in both patterns alternate between even and odd.	5.OA.B.C
Input	2	3	4	5																			
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11	Josie started with 18 coins in her collection. Each week she added 7 more coins. How many weeks will it take Josie to have 100 coins in her collection?	12	4.OA.C.5																				
12	<p>In art class, the total colored pencils needed is 8 times the number of students. Complete the table to show how many colored pencils are needed for different numbers of students.</p> <table><tr><th>Number of Students</th><th>Total Colored Pencils Needed</th></tr><tr><td>4</td><td></td></tr><tr><td>11</td><td></td></tr><tr><td>15</td><td></td></tr><tr><td>8</td><td></td></tr></table>	Number of Students	Total Colored Pencils Needed	4		11		15		8		<table><tr><th>Number of Students</th><th>Total Colored Pencils Needed</th></tr><tr><td>4</td><td>32</td></tr><tr><td>11</td><td>88</td></tr><tr><td>15</td><td>120</td></tr><tr><td>8</td><td>64</td></tr></table>	Number of Students	Total Colored Pencils Needed	4	32	11	88	15	120	8	64	4.OA.C.5
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13	Blaire is making a necklace with beads. She adds a yellow bead, an orange bead and then a blue bead. Then she repeats the same bead pattern over and over again. What color will the 50th bead be? Explain.	Answers will vary. Example answer: There are 3 terms. $50 \div 3 = 16 \text{ R}2$, so the 50th bead will be the 2nd bead color in the pattern, which is orange.	4.OA.C.5																				

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Question number	Question	Answers	Standard																																
14	<p>Grant and Mieko started a game with 45 coins each. Grant uses 9 coins each level. Mieko uses 3 coins each level. Complete the tables to show how many coins Grant and Mieko have at the end of some levels.</p> <p>Grant</p> <table> <tr> <td>Level (at the end)</td><td>1</td><td>2</td><td>5</td></tr> <tr> <td>Coins</td><td></td><td></td><td></td></tr> </table> <p>Mieko</p> <table> <tr> <td>Level (at the end)</td><td>1</td><td>2</td><td>5</td></tr> <tr> <td>Coins</td><td></td><td></td><td></td></tr> </table>	Level (at the end)	1	2	5	Coins				Level (at the end)	1	2	5	Coins				<p>Grant</p> <table> <tr> <td>Level (at the end)</td><td>1</td><td>2</td><td>5</td></tr> <tr> <td>Coins</td><td>36</td><td>27</td><td>0</td></tr> </table> <p>Mieko</p> <table> <tr> <td>Level (at the end)</td><td>1</td><td>2</td><td>5</td></tr> <tr> <td>Coins</td><td>42</td><td>39</td><td>30</td></tr> </table>	Level (at the end)	1	2	5	Coins	36	27	0	Level (at the end)	1	2	5	Coins	42	39	30	5.OA.B.C
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15	<p>Pattern A: 0, 3, 6, 9...</p> <p>Pattern B's terms...</p> <ul style="list-style-type: none"> • Are more than double but less than triple the terms in Pattern A • Alternate between even and odd • Are multiplied by the same whole number each time <p>What are the first four terms of Pattern B?</p> <p>____, ____, ____, ____</p>	0, 7, 14, 21	5.OA.B.C																																

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