

Station Activities: Sequences**Station 1**

Work with your partner to answer each question. Show your work.

1. Find the difference, d , of the sequence 1, 5, 9, 13, 17, ...
2. Find the difference, d , of the sequence 2, -1, -4, -7, -10, ...
3. Find the ninth term, a_9 , of the sequence 0, 2, 4, 6, 8, ...
4. Find the tenth term, a_{10} , of the sequence $\frac{3}{2}, 2, \frac{5}{2}, 3, \frac{7}{2}, \dots$
5. Find the common difference of the sequence $a_n = 3n + 2$.
6. Find a_{10} for the sequence $3x, 3x + 4, 3x + 8, 3x + 12, \dots$
7. Find a_8 for $2x, x, 0, -x, -2x, \dots$
8. Create a sequence for your partner. Have your partner find a_7 .

Station 2

Work with your partner to answer each question. Use the calculator as you need it.

1. Find r and state the explicit formula of the geometric sequence 1, 2, 4, 8, 16, ...
2. What is the 20th term of the sequence in problem 1?
3. Find r and state the explicit formula of the geometric sequence 2, 6, 18, 54, 162, ...
4. What is the 10th term of the sequence in problem 3?
5. Find r and state the explicit formula of the geometric sequence 5, 30, 180, 1080, ...
6. What is the 7th term of the sequence in problem 5?
7. Find a_1 and r of the geometric sequence with $a_4 = 32$ and $a_9 = 1024$.
8. Find a_1 and r of the geometric sequence with $a_3 = 360$ and $a_9 = 16,796,160$.

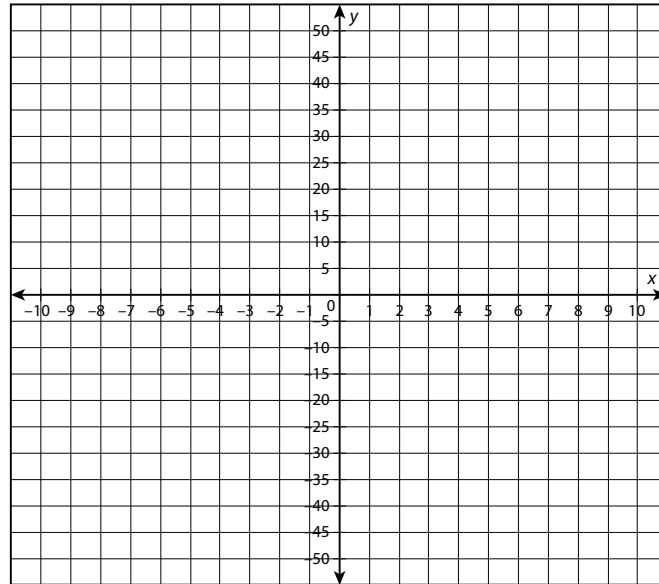
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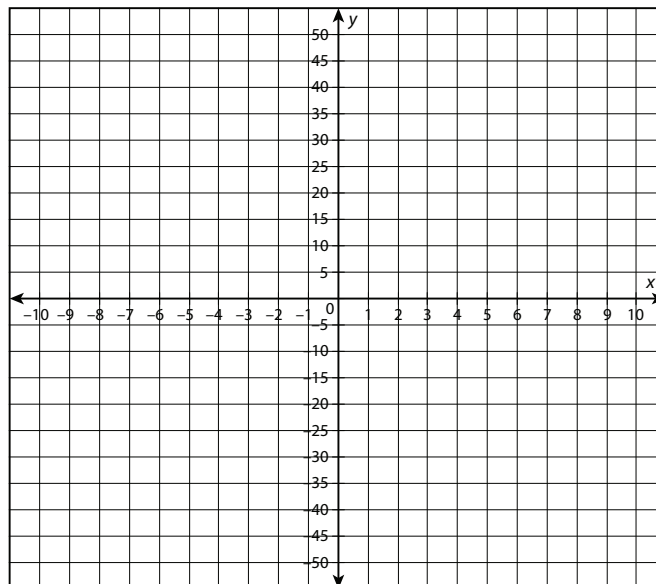
Station 3

Working with your group, graph each geometric sequence as an exponential function.

1. 1, 3, 9, 27, ...



2. 5, 10, 20, 40, ...

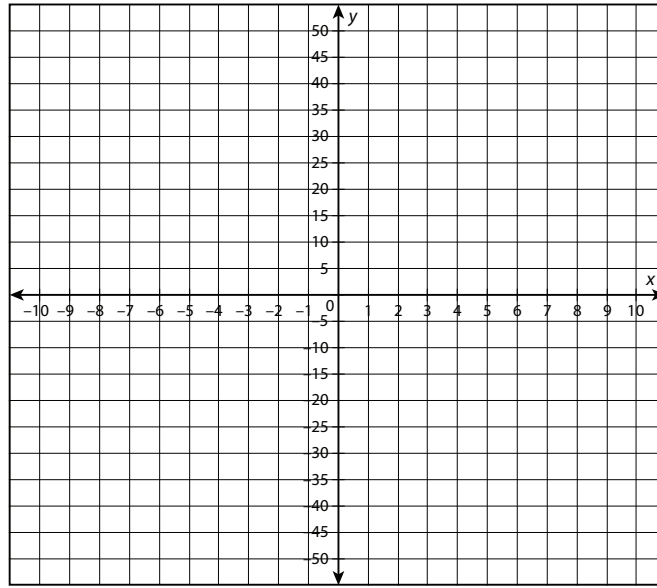


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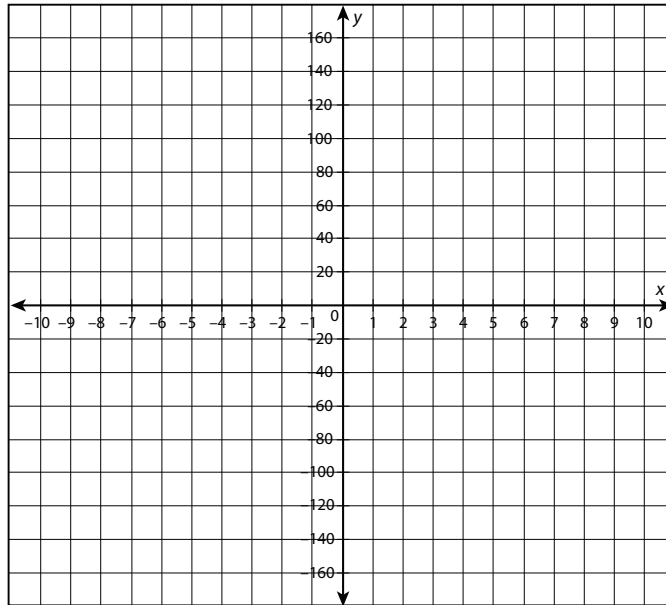
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3. 3, 6, 12, 24, 48, ...



4. 5, 15, 45, 135, ...

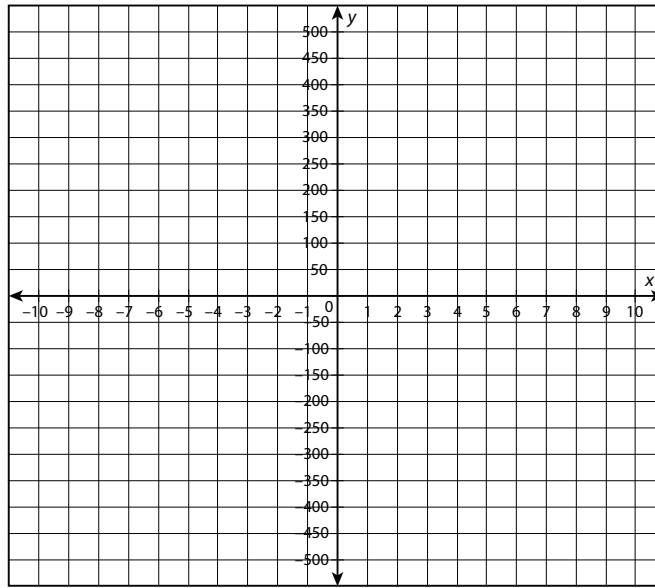


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5. 2, 12, 72, 432, ...



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Station 4

Work with your group to answer each question. Use a calculator as needed. Show all your work.

1. If some term, a_n , of a geometric sequence is 48, and $a_1 = 3$ and $r = 2$, what is n ?

2. If some term, a_n , of a geometric sequence is 1,310,720, and $a_1 = 5$ and $r = 4$, what is n ?

3. If some term, a_n , of a geometric sequence is 13,122, and $a_1 = 2$ and $r = 3$, what is n ?

4. If some term, a_n , of a geometric sequence is 384, and $a_1 = 3$ and $r = 2$, what is n ?

5. If some term, a_n , of a geometric sequence is 181,398,528, and $a_1 = 3$ and $r = 6$, what is n ?