

Determine whether we have an
Arithmetic or a Geometric Sequence.

whiteboard

1. Arithmetic or Geometric ?

input
↓
 $f(x) = 3x$
output

x	f(x)	explicit
1	3	$3(1)$
2	6	$3+3 = 3(2)$
3	9	$3+3+3 = 3(3)$
4	12	$3(4)$

x

Next = previous + 3

Recursive

$f(1) = 3$

$f(2) = f(1) + 3$

$f(3) = f(2) + 3$

$f(4) = f(3) + 3$

$f(x) = f(x-1) + 3$

2. Arithmetic or Geometric ?

x	$f(x)$
1	3
2	6
3	12
4	24

3. Arithmetic or Geometric ?

5, 10, 20 ...

4. Arithmetic or Geometric ?

4, 8, 12, ...

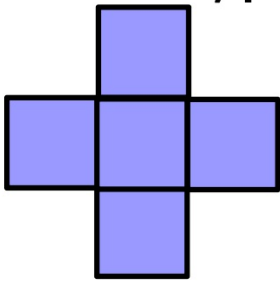
5. Arithmetic or Geometric ?

$$h(x) = 3^x (7)$$

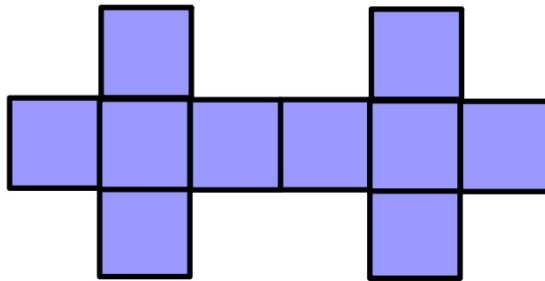
6. Arithmetic or Geometric ?

$$h(x) = 3x - 5$$

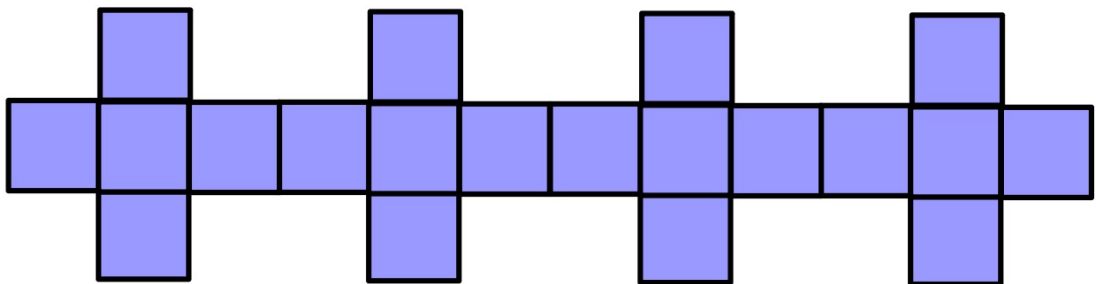
7. Arithmetic or Geometric ?



Step 1



Step 2



Step 3

8. Arithmetic or Geometric ?



At the
beginning

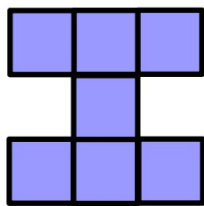


At one minute

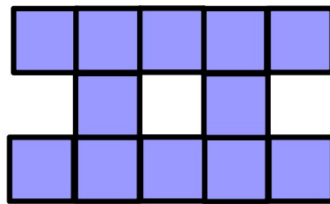


At two minutes

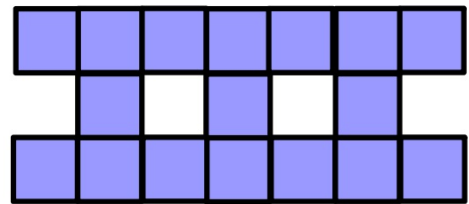
9. Arithmetic or Geometric ?



Step 1



Step 2



Step 3

$$f(x) = 7 + 5(x-1)$$

$7 + 5x - 5$

or simplified:

$$f(x) = 5x + 2$$

x	sequence	
1	7	7
2	12	$7+5$
3	17	$7+5+5 \neq 7(5^2)$ $\neq 7+5^2$
4		$7+5(3) = 7+5(2)$

10. Arithmetic or Geometric ?

