Topic: Evaluating Equations

Evaluate the following equations when x = { 1, 2, 3, 4, 5 }. Organize your inputs and outputs into a table of values for each equation. Let x be the input and y be the output.

5. $y = 4^x$

x	y
1	
2	
3	
4	
5	

6. $y = (-3)^x$

x	y
1	
2	
3	
4	
5	

7. $y = -3^x$

x	y
1	
2	
3	
4	
5	

8. $y = 10^x$

x	y
1	
2	
3	
4	
5	

9. Give the domain and range of $y = 4^x$ 10.

10. Give the domain and range of $y = (-3)^x$

11. Give the domain and range of $y = -3^x$

12. 10. Give the domain and range of $y = 10^x$

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Geometric Sequences (n = 1)

3. 400, 200, 100, 50, 25

Common ratio $\frac{1}{2}$

Recursive Function: $a_{n+1} = \frac{1}{2} a_n$

$a_1 = 400$

Explicit Function $f(x) = 400\left(\frac{1}{2}\right)^{x-1}$

4. 600, 240, 96, 38.4, 15.36

Common ratio .4

Recursive Function: $a_{n+1} = .4 a_{n+0}$

$a_1 = 600$

Explicit Function $f(x) = 600(.4)^{x-1}$

Two consecutive terms in a geometric sequence are given. Find the common ratio, the recursive form and the explicit formula

2	3	4	5
5	15	45	135

7. If f(2) = 5 and f(3) = 15 then f(4) = 45 and f(5) = 135

Common ratio 3

Explicit Rule $f(x) = 5(3)^{x-2}$

Recursive rule $a_2 = 5$ $a_{n+2} = 3a_{n+1}$

4	5	6	7
12	6		

8. If f(4) = 12 and f(5) = 6 then f(6) = 3 and f(7) = 1.5

Common ratio $.5 = \frac{1}{2}$

Explicit Rule

$f(x) = 12(.5)^{x-4}$

Recursive rule $a_4 = 12$ $a_{n+4} = .5a_{n+3}$