

Assignment

Write

Explain in your own words how to use common bases to solve an exponential equation.

Remember

You can use what you know about exponential functions to compare them in different representations, such as tables, graphs, equations, and situations.

Practice

1. Complete each table. Write a function that represents the data in the table and explain how you determined your expression.

a.

x	$f(x)$	Expression
0	1	3^0
1	3	
2	9	
3		
4		
5		
x		

b.

x	$f(x)$	Expression
0	6	$4^0 + 5$
1	9	
2	21	
3	69	
4	261	
5	1029	
x		

2. Solve each equation for the unknown.

a. $4^x = 256$

c. $2^{5-x} = \frac{1}{16}$

e. $4^{x+3} = 4$

g. $-6^{x-2} = \frac{1}{-1296}$

b. $6^{3x} = 216$

d. $3^{-2x} = \frac{1}{729}$

f. $\frac{1}{5^{x+4}} = 625$

h. $\frac{1}{2^{x-6}} = \frac{1}{4}$

Stretch

Describe a way in which you can write a function of the form $f(x) = a \cdot b^x$ as a linear function of the form $f(x) = c$. Explain what the constant multiplier means in this situation.

Review

1. Complete the table.

Explicit Formula	Exponential Function	Constant Ratio	y-Intercept
$840 \cdot 3^{x-1}$			
$-3 \cdot \left(\frac{1}{5}\right)^{x-1}$			

2. Solve each equation for x . Provide reasoning to justify each step of your solution method.

a. $10 = -3x + 4 - 2$

b. $1 = 2x - 1 + 2$

3. Rectangle $ABCD$ is shown on the graph.

a. Explain how you can transform the rectangle so that point C is located at the origin.

b. Graph the translated rectangle $A'B'C'D'$ so that point C is located at the origin. Then determine the area of rectangle $A'B'C'D'$.

