$b^x \cdot b^y = b^{x+y}$

$b^p = n \Leftrightarrow \log_b(n) = p$

Exponentials & Logarithms

$FV = P(1+r)^n$

$(b^x)^y = b^{xy}$

$y = a \cdot b^x$

1

Which expression is equivalent to $18(3)^{n+2}$?

A $2(3)^n$

B $2(3)^{n+4}$

C $2(3)^{2n+2}$

D $2(3)^{2n+4}$

2

Select all equations equivalent to $81^{2x} = 9^{x+4}$.

A $3^{6x} = 3^{2x+4}$

B $3^{8x} = 3^{2x+6}$

C $3^{6x} = 3^{2x+8}$

D $3^{8x} = 3^{2x+8}$

E $9^{2x} = 9^{x+4}$

F $9^{4x} = 9^{x+4}$

3

Each day, Julian deposits 2 times as much money as he did the day before into his savings account. His initial deposit is $6. Drag a value to each box to complete the equation to model the deposit, y, on day x.

0	
1	7
2	8
3	9
4	x
5	y
6	

$y = \square \left(\square\right)^{\square}$

4

The change in the population of fruit flies can be modeled by the equation $P(t) = 3(1.50)^t$, where t is time in days. Which statement describes the change in the population of fruit flies?

Ⓐ 1.50% decrease daily

Ⓑ 1.5% increase daily

Ⓒ 50% increase daily

Ⓓ 150% decrease daily

6

Stacy owns a collection of dolls from the 19th century, currently valued at $67,000. The value increases by 12.5% annually. Which function represents the value of the doll collection after t years?

Ⓐ $f(t) = 67000(0.125)^t$

Ⓑ $f(t) = 67000(0.857)^t$

Ⓒ $f(t) = 67000(1.125)^t$

Ⓓ $f(t) = 67000(85.7)^t$

5

What is the solution to the equation $10^{2h} = 45$, to the nearest hundredth?

7

A logarithmic equation is shown.

$$\log_{10}(2x - 2) = 4$$

Which process should be done **first** to find the correct value of x in the equation?

Ⓐ Rewrite the logaritmic equation as a natural log equation.

Ⓑ Take the log base 10 of each side.

Ⓒ Take the inverse natural log of each side.

Ⓓ Rewrite the logarithmic equation as an exponential equation.

Now finish solving for x.