

Exponential Equations Requiring Logarithms

Isolate the exponential expression, take logarithms, and round the final solution to four decimal places.

1. Isolate the power, then take natural logarithms.

$$4 \cdot e^{-6 \cdot q - 10} + 6 = 15$$

Domain: real variables $q \in \mathbb{R}$

2. Isolate the power, then take natural logarithms.

$$e^{n-3} + 3 = 16$$

Domain: real variables $n \in \mathbb{R}$

3. Isolate the power, then take natural logarithms.

$$3 \cdot 3^{-6 \cdot z} = 17$$

Domain: real variables $z \in \mathbb{R}$

4. Isolate the power, then take natural logarithms.

$$11^{-3 \cdot y - 6} + 9 = 18$$

Domain: real variables $y \in \mathbb{R}$

5. Isolate the power, then take natural logarithms.

$$4^{r-3} + 9 = 19$$

Domain: real variables $r \in \mathbb{R}$

6. Isolate the power, then take natural logarithms.

$$7^m = 20$$

Domain: real variables $m \in \mathbb{R}$

Math Sheet

Name _____ Score _____ / 16 Teacher _____ Date _____

Exponential Equations Requiring Logarithms

Isolate the exponential expression, take logarithms, and round the final solution to four decimal places.

7. Isolate the power, then take natural logarithms.

$$2 \cdot e^{6 \cdot q - 5} + 6 = 21$$

Domain: real variables $q \in \mathbb{R}$

8. Isolate the power, then take natural logarithms.

$$12^r = 22$$

Domain: real variables $r \in \mathbb{R}$

9. Isolate the power, then take natural logarithms.

$$13^{r+4} + 7 = 23$$

Domain: real variables $r \in \mathbb{R}$

10. Isolate the power, then take natural logarithms.

$$7^{2 \cdot n + 10} + 3 = 24$$

Domain: real variables $n \in \mathbb{R}$

11. Isolate the power, then take natural logarithms.

$$2 \cdot 13^{3 \cdot x} = 25$$

Domain: real variables $x \in \mathbb{R}$

12. Isolate the power, then take natural logarithms.

$$e^{n-7} + 9 = 26$$

Domain: real variables $n \in \mathbb{R}$

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Exponential Equations Requiring Logarithms

Isolate the exponential expression, take logarithms, and round the final solution to four decimal places.

13. Isolate the power, then take natural logarithms.

$$6 \cdot e^{-3 \cdot n + 9} - 4 = 27$$

Domain: real variables $n \in \mathbb{R}$

14. Isolate the power, then take natural logarithms.

$$14^{y-9} - 2 = 28$$

Domain: real variables $y \in \mathbb{R}$

15. Isolate the power, then take natural logarithms.

$$6 \cdot 15^{4 \cdot z} = 29$$

Domain: real variables $z \in \mathbb{R}$

16. Isolate the power, then take natural logarithms.

$$2^{-3 \cdot y - 10} + 3 = 30$$

Domain: real variables $y \in \mathbb{R}$
