Name: _____

A.CED.A.1: Exponential Equations 3

1 If $7^x = 3$, then x is equal to
1) $(\log 3)(\log 7)$
2) $\log 3 - \log 7$
3) $\frac{\log 3}{\log 7}$
4) $\frac{\log 7}{\log 3}$

2 What is the solution of $2(3^{x+4}) = 56$?
1) $x = \log_3(28) - 4$
2) $x = -1$
3) $x = \log(25) - 4$
4) $x = \frac{\log(56)}{\log(6)} - 4$

3 Using logarithms, solve the equation $3^{2x} = 4$ for x to the *nearest tenth*.

4 Using logarithms, solve the equation $(1.95)^x = 54$ for x to the *nearest integer*.

5 Using logarithms, solve the equation $5^x = 17$ for x to the *nearest tenth*.

6 Using logarithms, find x to the *nearest tenth*: $3^{2x} = 5$

7 Using logarithms, find x to the *nearest tenth*: $3^{2x} = 100$

8 Solve for x to the *nearest tenth*: $5^{3x} = 1{,}000$

9 Solve for x to the *nearest tenth*. $5^x = 30$

10 Solve for x to the *nearest hundredth*: $6^x = 45$

11 Find x to the *nearest hundredth*: $3^x = 6$

12 Using logarithms, find w to the *nearest hundredth*: $5^{2w} + 9 = 40$

13 What is the value of x in the equation $3^x = 148$, expressed to the *nearest hundredth*?

14 Given: $y = 4.1^x$
Find x, to the *nearest tenth*, when $y = 26$.

15 Using logarithms, solve for x to the *nearest hundredth*: $5^x = 1{,}325$

A.CED.A.1: Exponential Equations 3
Answer Section

1 ANS: 3

$$7^x = 3$$

$$\log 7^x = \log 3$$

$$x \log 7 = \log 3$$

$$x = \frac{\log 3}{\log 7}$$

REF: 061009b

2 ANS: 1

$$\log 3^{x+4} = \log 28$$

$$\frac{(x+4)\log 3}{\log 3} = \frac{\log 28}{\log 3}$$

$$x + 4 = \frac{\log 28}{\log 3}$$

$$x = \log_3 28 - 4$$

REF: 082306aii

3 ANS:
0.6

REF: 068038siii

4 ANS:
6

REF: 088437siii

5 ANS:
1.8

REF: 088536siii

6 ANS:
0.7

REF: 089438siii

7 ANS:
2.1

REF: 089542siii

8 ANS:
1.4

REF: 069641siii
9 ANS:
2.1

REF: 019737siii
10 ANS:
2.12

REF: 089739siii
11 ANS:
1.63

REF: 019939siii
12 ANS:
1.07

REF: 010041siii
13 ANS:
4.55

REF: 060109siii
14 ANS:
2.3

REF: 010240siii
15 ANS:
4.47

REF: 080339siii