8.EE.A.3 Write Decimals in Scientific Notation (and vice versa)

8.EE.A.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.

1 Expressed in decimal notation, 4.726×10^{-3} is
 1) 0.004726
 2) 0.04726
 3) 472.6
 4) 4,726

2 According to the 2000 census, the population of New York State was approximately 18,900,000. How is this number expressed in scientific notation?
 1) 1890×10^4
 2) 18.9×10^6
 3) 1.89×10^7
 4) 189×10^5

3 The distance from Earth to the Sun is approximately 93 million miles. A scientist would write that number as
 1) 9.3×10^6
 2) 9.3×10^7
 3) 93×10^7
 4) 93×10^{10}

4 The video of the movie Star Wars earned $193,500,000 in rental fees during its first year. Expressed in scientific notation, the number of dollars earned is
 1) 1935×10^8
 2) 193.5×10^6
 3) 1.935×10^6
 4) 1.935×10^8

5 Expressed in scientific notation, the number 4,600,000,000 is
 1) 4.6×10^{-8}
 2) 4.6×10^{-9}
 3) 4.6×10^9
 4) 0.46×10^{10}

6 A micron is a unit used to measure specimens viewed with a microscope. One micron is equivalent to 0.00003937 inch. How is this number expressed in scientific notation?
 1) 3.937×10^{-5}
 2) 3.937×10^5
 3) 3937×10^{-8}
 4) 3937×10^8

7 The approximate number of seconds in a year is 32,000,000. When this number is written in scientific notation, the numerical value of the exponent is
 1) −7
 2) 6
 3) 7
 4) 8

8 If $6.54 \times 10^n = 65,400$, what is the value of n?
 1) 5
 2) −5
 3) −3
 4) 4

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9 If 0.0154 is expressed in the form 1.54×10^n, n is equal to
1) −2
2) 2
3) 3
4) −3

10 If 0.0347 is written by a scientist in the form 3.47×10^n, the value of n is
1) −2
2) 2
3) 3
4) −3

11 What is the value of n if the number 0.0000082 is written in the form 8.2×10^n?
1) −6
2) −5
3) 5
4) 6

12 The mass of an orchid seed is approximately 0.0000035 gram. Written in scientific notation, that mass is equivalent to 3.5×10^n. What is the value of n?
1) −8
2) −7
3) −6
4) −5

13 The size of a certain type of molecule is 0.00009078 inch. If this number is expressed as 9.078×10^n, what is the value of n?
1) −5
2) 5
3) −8
4) 8

14 Which expression is equivalent to 6.02×10^{23}?
1) 0.602×10^{21}
2) 60.2×10^{21}
3) 602×10^{21}
4) 6020×10^{21}

15 The expression 0.62×10^3 is equivalent to
1) 0.062
2) 62,000
3) 6.2×10^4
4) 6.2×10^2

16 The number 8.375×10^{-3} is equivalent to
1) 0.0008375
2) 0.008375
3) 0.08375
4) 8,375

17 The number 1.56×10^{-2} is equivalent to
1) 156
2) 0.156
3) 0.0156
4) 0.00156

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1	ANS:	1
2	ANS:	3
3	ANS:	2
4	ANS:	4
5	ANS:	3
6	ANS:	1
7	ANS:	3
8	ANS:	4
9	ANS:	1
10	ANS:	1
11	ANS:	1
12	ANS:	3
13	ANS:	1
14	ANS:	3
15	ANS:	4
16	ANS:	2
17	ANS:	3