

Name: _____

Date: _____

Physics 20

Assignment 3

Scientific Notation Worksheet

Write out the decimal equivalent (regular form) of the following numbers.

Section A: Model: $10^1 = 10$

1) $10^2 =$ _____

4) $10^{-2} =$ _____

2) $10^4 =$ _____

5) $10^{-5} =$ _____

3) $10^7 =$ _____

6) $10^0 =$ _____

Section B: Model: $2 \times 10^2 = 200$

7) $3 \times 10^2 =$ _____

10) $6 \times 10^{-3} =$ _____

8) $7 \times 10^4 =$ _____

11) $9.00 \times 10^{-2} =$ _____

9) $2.4 \times 10^3 =$ _____

12) $4 \times 10^{-6} =$ _____

Section C: Now convert from decimal form into scientific notation. Model: $1,000 = 10^3$

13) $10 =$ _____

16) $0.1 =$ _____

14) $100 =$ _____

17) $0.0001 =$ _____

15) $100,000,000 =$ _____

18) $1 =$ _____

Section D: Model: $2,000 = 2 \times 10^3$

19) $400 =$ _____

22) $0.005 =$ _____

20) $60,000 =$ _____

23) $0.0034 =$ _____

21) $750,000 =$ _____

24) $0.06457 =$ _____

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Perform the following operations in scientific notation.

Section E: Multiplication

Model: $(2 \times 10^2) \times (6 \times 10^3) = 12 \times 10^5 = 1.2 \times 10^6$

25) $(1 \times 10^3) \times (3 \times 10^1) =$ _____

26) $(3 \times 10^4) \times (2 \times 10^3) =$ _____

27) $(5 \times 10^{-5}) \times (11 \times 10^4) =$ _____

28) $(2 \times 10^{-4}) \times (4 \times 10^3) =$ _____

Section F: Division

Model: $(12 \times 10^3) / (6 \times 10^2) = 2 \times (10^3 \times 10^{-2}) = 2 \times 10^1$

29) $(8 \times 10^6) / (4 \times 10^3) =$ _____

30) $(3.6 \times 10^8) / (1.2 \times 10^4) =$ _____

31) $(4 \times 10^3) / (8 \times 10^5) =$ _____

32) $(9 \times 10^{21}) / (3 \times 10^{19}) =$ _____

Section G: Addition

Model: $(3 \times 10^4) + (2 \times 10^3) = (3 \times 10^4) + (0.2 \times 10^4) = 3.2 \times 10^4$

33) $(4 \times 10^3) + (3 \times 10^2) =$ _____

34) $(9 \times 10^2) + (1 \times 10^4) =$ _____

35) $(8 \times 10^6) + (3.2 \times 10^7) =$ _____

36) $(1.32 \times 10^{-3}) + (3.44 \times 10^{-4}) =$ _____

Section H: Subtraction

Model: $(3 \times 10^4) - (2 \times 10^3) = (30 \times 10^3) - (2 \times 10^3) = 28 \times 10^3 = 2.8 \times 10^4$

37) $(2 \times 10^2) - (4 \times 10^1) =$ _____

38) $(3 \times 10^{-6}) - (5 \times 10^{-7}) =$ _____

39) $(9 \times 10^{12}) - (8.1 \times 10^9) =$ _____

40) $(2.2 \times 10^4) - (3 \times 10^2) =$ _____