

1. Simplify if necessary, and then rewrite each number to fill in the blank:

longhand	Scientific Notation
.0000000000042	$4.2 \times 10^{-12}$
265,300,000,000,000	$2.653 \times 10^{14}$
$800 \times 465,000,000$	$3.72 \times 10^{11}$
$.00042 \div 6,000,000$	$7.0 \times 10^{-11}$
62,580,000,000,000,000	$6.258 \times 10^{16}$
.00000000000000000001	$1.0 \times 10^{-19}$
$.0002 \times .0002$	$4.0 \times 10^{-8}$

2. Order from largest to smallest:  $1.26 \times 10^{12}$ ;  $1.25 \times 10^{12}$ ; 126,000,000,000

smallest	middle	largest
126,000,000,000	$1.25 \times 10^{12}$	$1.26 \times 10^{12}$

3. Evaluate the expression; write your answer in scientific notation. Show your steps:  $(3.2 \times 10^6)^2$

$(3.2)^2 \times (10^6)^2$	$10.24 \times 10^{12}$	$(1.024 \times 10^2) \times 10^{12}$	$1.024 \times 10^{14}$
---------------------------	------------------------	--------------------------------------	------------------------

4. Evaluate the expression; write your answer in scientific notation. Show your steps:  $(1.6 \times 10^4)(1.2 \times 10^5)$

$1.6 \times 1.2 \times 10^4 \times 10^5$			$1.92 \times 10^9$
--	--	--	--------------------

5. Evaluate the expression; write your answer in scientific notation. Show your steps:  $(1.65 \times 10^{-12})(3.2 \times 10^{-5})$

$1.65 \times 3.2 \times 10^{-12} \times 10^{-5}$			$5.28 \times 10^{-17}$
--	--	--	------------------------

6. Evaluate the expression; write your answer in scientific notation. Show your steps:  $(3.2 \times 10^5)(1.2 \times 10^{-2})$

$3.2 \times 1.2 \times 10^5 \times 10^{-2}$			$3.84 \times 10^3$
---	--	--	--------------------

7. Evaluate this expression; write your answer in scientific notation.

$$\frac{1.65 \times 10^3}{1.25 \times 10^4}$$

$1.32 \times 10^{-1}$
-----------------------

8. Evaluate this expression; write your answer in both scientific notation and in longhand:  $(1.1 \times 10^6)^{-2}$

STEPS			
$1.1^{-2} \times (10^6)^{-2}$	$(1/1.21) \times 10^{-12}$	$.826446 \times 10^{-12}$	$8.26446 \times 10^{-1} \times 10^{-12}$
		Scientific Notation	Longhand
		$8.26446 \times 10^{-13}$	.00000000000826446

9. Simplify these expressions:

Expression	Simplified
$9^{-1/2}$	1/3
$66 - 64^{1/3}$	62
$24 \times 81^{-1/4}$	8
$9^{1/2} \times 16^{1/4}$	6

10. Light travels at approximately  $3.0 \times 10^8$  m/sec. How far will it travel in a week?

STEPS			
$3.0 \times 10^8 \times 60 \times 60 \times 24 \times 7$	$3.0 \times 10^8 \times 604,800$	$3.0 \times 10^8 \times 6.048 \times 10^5$	$18.144 \times 10^{13}$
		Scientific Notation	Longhand
		$1.8144 \times 10^{14}$	181,440,000,000,000