

Name: _____
 PreAlgebra – Test 5 review
 2/15/2015

- 1) What is the product rule?
- 2) What is the quotient rule?
- 3) What is the power rule?
- 4) What do you do with a negative exponent to write it as a positive exponent?
Reciprocate.
- 5) Anything with an exponent of zero is 1.
- 6) Fill in the blanks for the questions you should ask/answer yourself when converting units.
 - 1) Where are you going?
 - 2) Where are you starting?
 - 3) How are you going to get there?
 - a) Which one is bigger? (*always gets a 1)
 - b) The smaller one gets the number on the line.

7) Simplify the following and write your answer in scientific notation.

a) $\frac{3.14 \times 10^{-4}}{4.13 \times 10^5} = .7603 \times 10^{-9}$
 7.603×10^{-10}

b) $(9.8 \times 10^8)(3.69 \times 10^{14})$
 $36.16 \times 10^{22} = 3.616 \times 10^{23}$

c) $(10^6 \times 10^7)^{-2}$
 $(10^{13})^{-2} = 10^{-26}$

d) $(6.83 \times 10^4)(4.78 \times 10^{-3})$
 $32.65 \times 10^1 = 3.265 \times 10^2$

8) Give the name of the following units.

a) MJ *megajoule*

b) pJ *picojoule*

c) dL *deciliter*

d) nW *nanowatt*

9) Give the abbreviation of the following units.

a) microgram μg or mcg

b) hectometer hm

c) centiampere cA

d) kilocandela kcd

10) One Step Conversions

a) 7700 J to kJ $? kJ = \frac{7.7 \times 10^3 J}{10^3 J} = 7.7 kJ$

b) 4450 ms to s $? s = \frac{4.45 \times 10^3 ms}{10^3 ms} = 4.45 s$

c) 0.00215 g to μg $= 2.15 \times 10^3 \mu g$

d) 936800 Mm to m $= 9.368 \times 10^{11} m$

$? \mu g = \frac{2.15 \times 10^{-3} g}{10^{-6} g} = 2.15 \times 10^3 \mu g$

$? m = \frac{9.368 \times 10^5 Mm}{10^6 m} = 9.368 \times 10^{11} m$

$$? dm = \frac{9.368 \times 10^5 Mm}{1 Mm} \times \frac{10^6 m}{1 m} \times \frac{10^1 dm}{1 m} = 9.368 \times 10^{12} dm$$

11) Two Step Conversions

a) 936800 Mm to dm

$$? Mg = \frac{5.871 \times 10^2 \mu g}{1 \mu g} \times \frac{1 g}{10^6 \mu g} \times \frac{1 Mg}{10^6 g} =$$

b) 587.1 μg to Mg

$$5.871 \times 10^{-10} Mg$$

c) 319000 ML to cL

d) 0.4744 μJ to nJ

$$? cL = \frac{3.19 \times 10^5 ML}{1 ML} \times \frac{10^6 L}{1 L} \times \frac{10^2 cL}{1 L} = 3.19 \times 10^{13} cL$$

$$? nJ = \frac{4.744 \times 10^{-1} \mu J}{1 \mu J} \times \frac{1 J}{10^6 \mu J} \times \frac{10^9 nJ}{1 J} =$$

$$4.744 \times 10^2 nJ$$

* 12) Basic Conversions

a) 28.68 gal to c

b) 263500 days to weeks

next page.

c) 0.004279 lbs to g

d) 0.3694 ft to m

13) Write the following in scientific notation.

a) 123400 1.234×10^5

b) 0.0009876 9.876×10^{-4}

c) 0.006453

$$6.453 \times 10^{-3}$$

d) 3985

$$3.985 \times 10^3$$

14) Write the following in standard form:

a) 3.54×10^5 354000

b) 5.78×10^{-3} .00578

c) 6.89×10^{-5}

$$.0000689$$

d) 9.72×10^3

$$9720$$

12 a)

$$12a) ?_c = \frac{28.68 \text{ gal}}{1 \text{ gal}} \times \frac{4 \text{ qt}}{1 \text{ gal}} \times \frac{2 \text{ pt}}{1 \text{ qt}} \times \frac{2 \text{ c}}{1 \text{ pt}} = 4.589 \times 10^2 \text{ c}$$

$$b) ?_{\text{weeks}} = \frac{263500 \text{ days}}{7 \text{ days}} = 3.764 \times 10^4 \text{ weeks}$$

$$c) ?_g = \frac{.004279 \text{ lbs}}{1 \text{ lbs}} \times \frac{16 \text{ oz}}{1 \text{ lbs}} \times \frac{28.3 \text{ g}}{1 \text{ oz}} = 1.933 \text{ g}$$

$$d) ?_m = \frac{.3694 \text{ ft}}{1 \text{ ft}} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{2.54 \text{ cm}}{1 \text{ in}} \times \frac{1 \text{ m}}{10^2 \text{ cm}} = 1.126 \times 10^{-1} \text{ m}$$