Name: _____ Date: _____ Period: _____

Physics Math Review

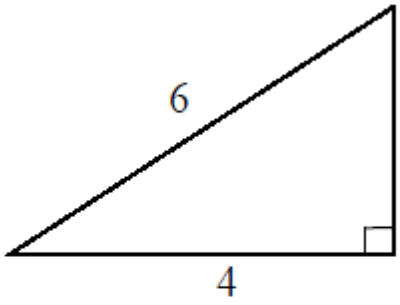
Directions: On a separate sheet of paper complete the following problems. Show all of your work and circle your final answers.

Algebra

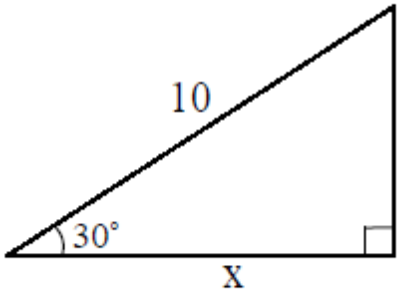
1. Given the equation: $2a - bc = c$
   a. Solve the equation for a (get a by itself).
   b. Solve for b.
   c. Solve for c.
2. Given the equation: $11 - t^2 = ac + bc$
   a. Solve for a.
   b. Solve for b.
   c. Solve for c.
   d. Solve for t.
3. Express the following fractions as decimals: $\frac{1}{3}, \frac{1}{10}, \frac{1}{100}, \frac{3}{100}, \frac{7}{1000}$
4. Express the following decimals as fractions: 0.5, 0.25, 0.2, 0.1, 0.06, 0.009
5. Solve the quadratic equation for x: $3x^2 - 5x + 6 = 5$
6. Find a solution that will satisfy each system of equations.
   a. $y = 3x$ and $2x + 2y = 32$
   b. $f - g = 5$ and $3f + 2g = 5$
7. The following questions involve formulas you will use in AP Physics. Do not be confused by the variables and their subscripts. For example, treat v and v_o as you would two different numbers.
   a. $v = v_o + at$ $a =$ _____
   b. $v^2 = v_o^2 + 2a\Delta x$ $a =$ _____
   c. $PV = nRT$ $T =$ _____
   d. $KE = \frac{1}{2}mv^2$ $v =$ _____
   e. $T = 2\pi\sqrt{\frac{l}{g}}$ $l =$ _____
   f. $F_g = G\frac{m_1 m_2}{r^2}$ $r =$ _____
   g. $B = \frac{\mu_o I}{2\pi r}$ $I =$ _____
   h. $\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i}$ $d_i =$ _____

Geometry and Trig

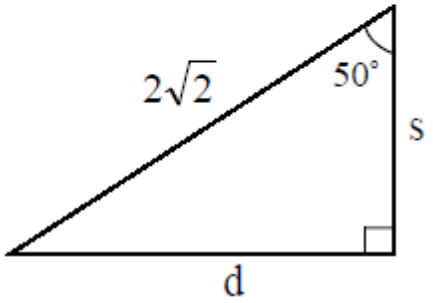
8. Find the missing side.



9. Find the missing side x.



10. Find both missing sides and the missing angle.



Scientific Notation

11. What does 2.45×10^{9} mean? Expand it.

12. Fill in the blanks to make the equation equal.

a. $\_\_\_\_\_\times10^{4}=31{,}000$

b. $\_\_\_\_\_\times10^{6}=205$

c. $64.2\times10^{7}=$ _____

d. $15{,}000\times10^{-6}=$ _____

e. $7.14\times$ ___ $=7{,}140{,}000$

f. $8{,}450\times$ ___ $=.00845$

Unit conversion

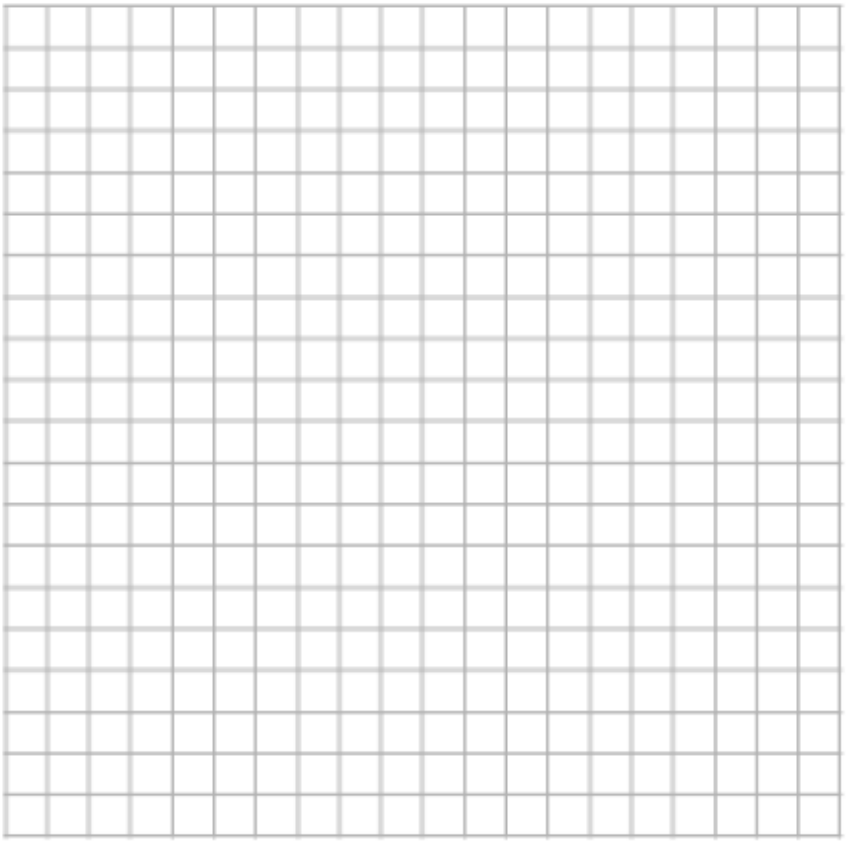
13. Convert 160 centimeters to
    a. meters
    b. millimeters
    c. kilometers
    d. inches
    e. feet

14. How many _____ are in one year? Write your answer in scientific notation.
    a. days
    b. hours
    c. minutes
    d. seconds

Variable Relationships

15. Consider the data in the table:
    a. Graph *y versus x*. (*y* on the vertical axis and *x* on the horizontal axis)
    b. Can you draw a straight line through the points?
    c. Is there a relationship between x and y?
    d. Can you write an equation relating x and y?

x	y
3	1
6	2
9	3
12	4
15	5



16. Consider the data in the table:

a	b
1	2
2	8
3	18
4	32
5	50

a. Graph *b vs. a.* (the points with *b* on the vertical axis and *a* on the horizontal axis)
b. Can you draw a straight line through the points?
c. Is there a relationship between a and b?
d. Can you write an equation relating a and b?