



## Chem Skills Worksheet #9: Dimensional Analysis

1. The Star of India sapphire weighs 563 carats. A carat equals 200.0 mg. What is the mass of the gemstone in grams?



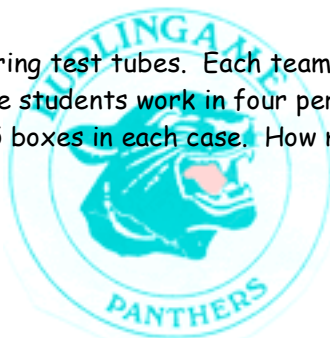
2. A sprinter runs the 120.0 yard dash in 11.0 seconds. Express her speed in miles per hour.



3. A jet airplane flies at the speed of 768 miles per hour. What is this speed in cm per second?



4. The chemistry department is ordering test tubes. Each team receives 12 test tubes. There are 7 classes each with 32 students. The students work in four person teams. A box of test tubes contains 100 tubes and there are 5 boxes in each case. How many cases should BHS order?



5. A football field measures 100.0 yard long by 160.0 feet wide. What is the area in square meters?  
(Area of field = length x width)



6. The speed of light is  $3.0 \times 10^{10}$  cm/sec. Express this speed in km/hr?



7. The driver of a car uses one gallon of gasoline for every 24.6 miles driven. Express this in terms of kilometer per liter.



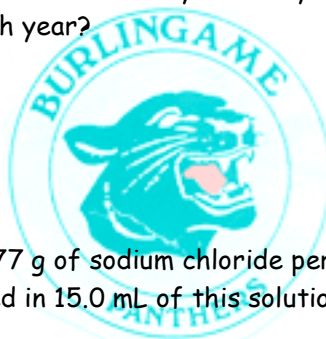
8. If the price of gas is \$2.85 per gallon. what is the cost per Liter?



9. A student swims 3.22 miles per hour. How many seconds will it take the student to swim 1.00 kilometer?



10. School lasts 179 days. If you take 7 classes a day and they last an average of 51.0 minutes each, how many seconds are you in school each year?



11. A sample of seawater contains 6.277 g of sodium chloride per liter of solution. How many mg of sodium chloride would be contained in 15.0 mL of this solution?



12. A Jack rabbits can achieve speeds of about 68 km/h. How many minutes would it take him to run a mile?

