Multiply by 4 by Doubling Twice

Mental Math Strategy

***When** to use this strategy:* Use this strategy when you need to multiply a number by 4.
***How** to use this strategy:* Multiply by 2 (double) and then multiply again by 2 (double again).

Examples: $4 \times 13 = 2 \times 2 \times 13 = 2 \times 26 = 52$ $4 \times 57 = 2 \times 114 = 228$ $4 \times 1035 = 4140$

Use this (new) strategy on the following:	
1.) Monica's Porsche gets 21 mpg. If Monica has 4 gals of gas left, how far can she travel?	2.) David, a dog enthusiast, has 13 dogs. He really enjoys buying new toys for his animals. Last Christmas David purchased 4 toys for each dog, how many toys did David buy?
3.) $(x^{15})^4 =$	4.) A new apartment complex has 4 rooms per level. If the complex has 39 floors, how many rooms does the apartment complex have?

Use any strategy you know on the following:	
5.) Convert 4 feet to inches.	6.) L = angular momentum (N·m·sec); I = moment of inertia (kg·m^2); w = angular velocity (radians/sec) Angular momentum is best described as L = Iw. If Phoebe's boomerang has an angular velocity of 14 radians/sec and has a moment of inertia at 4 (kg·m^2), what is the angular momentum of Phoebe's boomerang?
7.) Estimate the solution $509 + r = 707$	8.) At the baseball game the concession stands brought in a total of $75,000. There were 25 thousand people in attendance. What is the average amount spent by each person at the game?