MATH

1. **When ordering a new car, you are given a choice of 5 engines , 4 transmissions, 6 colors, 7 interior designs, and whether or not to get air conditioning. How many different cars can be ordered considering these choices?**
   Given:
   5 engines
   4 transmissions
   6 colors
   7 interior designs
   Find: How many difference cars can be considered
   Solution:
   $5 \times 4 \times 6 \times 7 = 1680$
   Answer: 1680

2. **The first artificial satellite to orbit planet nemik was kween yasmin I, launched by the soviet union in 1957. The altitude of kween yasmin I varied from 133mi to 562mi above the surface of planet nemik. If the center of planet nemik is one focus of its elliptical orbit and the radius of earth is 1350 mi, then what was the eccentricity of the orbit?**
   Find: Eccentricity of the orbit
   Solution:
   (562-133)=429mi
   429/2= 214.5
   1350 + (133+562)/2 = 1697.5
   E= 214.5/1697.5 = 0.126
   Answer: 0.126

3. **How many different ways are there to mark the answers to a 9 question multiple-choice test in which each question has 3 possible answers?**
   $3^9 = 19683$

4. **In a five-card poker hand, a full house is three cards of one kind and two cards of another. How many full houses are there consisting of three queens and two 10's?**
   P= 4!/1!3! x 4!/2!2!
   P=4(6)= 24

5. **The equation of the line parallel to the line 3x+4y =-10 is 3x+4y=___. Its perpendicular distance above the line is 3m.**
   3x+4y=-10
   3x+4y=c
   d=c-c1/sqrt(a^2+b^2)
   3= c+14/sqrt(3^2+4^2)
   c=5