

**YOU MUST SHOW WORK**

On the quiz tomorrow, **little or no credit** will be given for answers that do not show work. You must show how you set up the fractions and show the terms that cancel out.

**Using the formulas:**

1.  ${}_{14}P_5 = \underline{\hspace{2cm}}$

2.  $\frac{9!}{5!(9-5)!} = \underline{\hspace{2cm}}$

3.  ${}_{10}C_7 = \underline{\hspace{2cm}}$

4.  $\frac{7!}{8!} = \underline{\hspace{2cm}}$

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**Permutations & Combinations**

- Our club elections are tomorrow. How many different ways can the president, vice president, secretary, and treasurer be chosen from 10 students?
  - The math club is going on a trip to Six Flags. Although the club has 20 members it can only afford to send 8 members. How many different combinations can be formed?
  - Mrs. Freeman is looking to select a group of 8 students from her class of 24 students for a special project. How many different groups of 8 are possible?
  - You have 10 songs on your iPod. If you use the shuffle feature to play all 10 songs without repeating any, how many different orderings are possible?
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**Counting Principle**

9. At McDonald's you have 3 choices of beverage, 6 choices of entrée, and 10 choices of dessert. How many different meals are possible?
  
  10. If you roll a 20-sided die and a six-sided die, how many outcomes are possible?
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**Simple Probability**

11. In a regular deck of cards, what is the probability of drawing a card that is not a face card?
  
  
  
  
  
  
  
  
  
  
  12. In your sock drawer, you have 20 brown socks, 30 white socks, and 12 multi-colored socks. If you reach into the drawer without looking, what is the probability that you will pull out a multi-colored sock?
  
  
  
  
  
  
  
  
  
  
  13. A jar contains 7 blue, 25 black, and 8 fuchsia marbles. A marble is drawn at random. What is  $P(\text{blue})$ ?
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**Mutually Exclusive OR Overlapping**

14. You roll two, 6-sided dice and calculate the sum. What is the probability that the sum of the two dice is either equal to 4 or equal to or greater than 10?
  
  
  
  
  
  
  
  
  
  
  15. You choose a card from a standard deck of 52 playing cards. Find the probability that you choose a black card or an 8.
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