Permutations (Assignment 45)

1. Compute: a) ${}_5P_3$ b) ${}_6P_4$ c) ${}_{10}P_6$

d) ${}_2P_3$ e) ${}_5P_1$ f) ${}_8P_4$

2. Find the number of ways 4 members from a family of 5 can line up for a photo shoot.

3. In how many ways can letters of the set {R, S, T, U} be arranged to form ordered codes of 2 letters? (No letters are repeated.)

4. A license plate in Kentucky begins with 3 letters. All three of them must be A, B, C, D or E. How many different permutations of these letters can be made if no letter is used more than once?

5. In how many ways can a president, a treasurer and a secretary be chosen from among 7 candidates?

6. A teacher wants to write an ordered 6-question test from a pool of 10 questions. How many different forms of the test can the teacher write?

7. Twelve skiers are competing in the final round of the Olympic freestyle skiing aerial competition. In how many different ways can 3 of the skiers finish first, second, and third to win the gold, silver, and bronze medals?

8. a) You are considering 10 different colleges. Before you decide to apply to the colleges, you want to visit some of them. In how many ways can you schedule your itinerary to visit 6 of the colleges?

b) In how many ways can you visit all 10 colleges?

Find the number of permutations of the letters of these words. (Be careful with #12.)

9. HELP

10. COMPUTER

11. TODAY

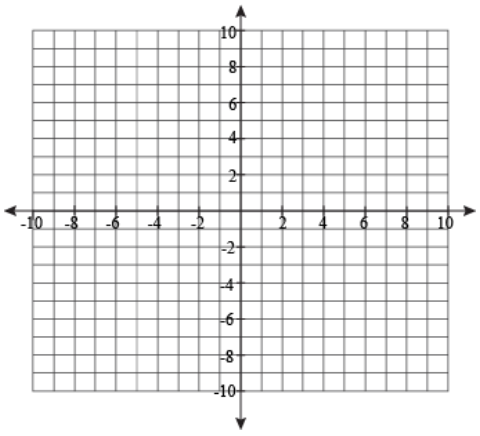
12. THREE

13. A menu has a choice of 4 appetizers, three main courses, and three desserts. How many different dinners are possible if you choose one appetizer, one main course, and one dessert?

14. There are seven students in a class: three boys and four girls. In how many ways can they line up if a girl must be in the front of the line, and a boy must be in the back of the line?

Graph each function and find the domain and range. Plot at least three accurate points.

15. $f(x) = \log_2(-x)$



16. $f(x) = -4 + \log_{1/3} x$