

4-6 Combinations

Name: _____

Time> Start: _____ Finish: _____ Total Time = _____

- _____ 1. Ann, Bob, Chad, and Dave are all contestants on the game show “Hickam Mania.” Three of the contestants will be picked to move on to the next round while one goes home. Using the letter of each person’s name, list out the possible combinations of people who could be moving on to the next round. Order doesn’t matter. Thus, when you list them, put them in alphabetical order.
- _____ 2. Assume the same situation as above, except only two people move on to the next round. Again, order doesn’t matter. List out the combinations.
- _____ 3. Of the 20 kids in my “Hickam fan club” 10 of them will be picked to serve tea at the Hickam family reunion. How many combinations can I pick from the 20 kids? Order doesn’t matter.
- _____ 4. How many 5 card hands can be dealt from a deck of cards?
(For you non-card people, there are 52 cards in a deck.)
- _____ 5. A royal flush is an Ace, King, Queen, Jack, and Ten all of the same suit. What is the probability that I would be dealt a Royal Flush when playing poker with Allen, assuming he isn’t dealing off the bottom of the deck like he normally does?
- _____ 6. How many different ways can a 10 question True/False quiz be answered?
- _____ 7. The Virginia lottery has you pick five numbers from 1 to 56 and then one number from 1 to 46. If you match all 5 numbers and then the 1 number, you win the “Mega Millions.” What are the odds of winning the lottery?
- _____ 8. There are 10 girls and 8 boys up for the “Hickam Award.” In how many ways can 3 girls and 2 boys be selected to receive this prestigious award?
- _____ 9. Of the 10 pairs of shorts in my closet, I can only take 3 with me on my vacation to Bermuda. How many possible combinations exist?
- _____ 10. From the word “Happy” I am going to pick 2 letters. How many different sets of combinations can I make. Be careful and think on this one.
- _____ 11. Pizza Hut offers a large 3 topping pizza for \$9.99 as its special this month. If they have 8 toppings from which you can choose, how many different possibilities can you make assuming you choose 3 toppings?

_____ 12.

Consider the above problem, but add to it the fact that you might choose to get the three toppings or you might just have two, one, or none. Now how many possibilities exist?

DON'T ASK ME WHY, BUT I MISNUMBERED HERE FOR THE SAT QUESTIONS, AND SINCE I MADE VIDEOS WITH THESE NUMBERS, I DECIDED IT BEST TO LEAVE IT MISNUMBERED. SO INSTEAD OF STARTING AT 13 LIKE I SHOULD, I START AT 17. SORRY!

SAT Questions

_____ 17.

Samantha is packing for a trip. Of the towels in the closet, 6 are brown.

She will randomly pick one of the towels to pack. If the probability is $\frac{2}{5}$ that a towel she will pick is brown, how many towels are in the closet?

_____ 18.

In a pet store, there are three times as many goldfish as there are tropical fish.

There are twice as many orange goldfish as there are black goldfish.

What is the probability that a randomly selected fish from the store is a black goldfish?

A. $\frac{1}{12}$

B. $\frac{1}{6}$

C. $\frac{1}{4}$

D. $\frac{1}{2}$

E. $\frac{3}{4}$

_____ 19.

A pile of five coins consists of one penny, one nickel, one dime, one quarter, and one 50-cent piece. If two different coins are selected at random, what is the probability that the sum of these coins will be less than 35 cents?

_____ 20.

If an ant runs randomly through an enclosed circular field of radius 2 feet with an inner circle of radius 1 foot, what is the probability that the ant will be in the inner circle at any one time?

A. $\frac{1}{8}$

B. $\frac{1}{6}$

C. $\frac{1}{4}$

D. $\frac{1}{2}$

E. 1