TOPIC: FUNDAMENTAL COUNTING PRINCIPLE

Fundamental Counting Principle

◆ You'll be asked to find the number of total possible outcomes when faced with multiple options for multiple things.



3 shirts ____ 4 pants = ____ outfits

Fundamental Counting Principle

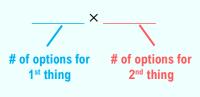
If there are: **m** possible choices for one thing / outcomes of one event,

... and *n* possible choices for another thing / outcomes of another event,

there are ______ TOTAL possible choices for BOTH things / outcomes of BOTH events.

EXAMPLE

(A) A menu lists 4 appetizers & 6 entrees. How many different meals with both an appetizer & an entree do you have to choose from?



(B) How many possible outcomes are there if you flip a coin & roll a six-sided die?



(C) How many different outfits can you make with 4 shirts, 5 pairs of pants, & 3 pairs of shoes?



◆ When faced with MORE than two things, just continue to _____ by the number of options of each thing.

TOPIC: FUNDAMENTAL COUNTING PRINCIPLE

PRACTICE

How many possible outcomes are there if you roll 5 dice?

PRACTICE

How many options are there for license plates with any 3 letters (A-Z) followed by any 3 numbers (0-9)?



PRACTICE

Phone numbers are 10 digits long. How many possible phone numbers are there if the 1st & 4th numbers can't be 0?