

**[10-08-31-T21]**  
*Homework Assignment*

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Please continue the tree that we began in class today. We wished to answer the question below.

Flavors: strawberry, chocolate, vanilla, cookie dough.

Cones: waffle, sugar, cake.

Toppings: sprinkles, hot fudge.

How many different ice cream treats are possible if each treat *must* include ice cream, a cone, and a topping?

[1] Finish the tree we began today in class. How many different possible ice cream treats are there?

[2] Make another tree for this question, but this time pick first the topping, then choose the flavor, and last the cone. How many different possible ice cream treats are there?

[3] Can you think of a way to predict the answer to this question without actually making the tree? If so, think about how you would explain why your method should work.

[4] If you were able to think of a method in question [3], then apply it to a choice of 12 different model cars, 6 different colors, 4 different engine sizes, and convertible or not convertible. Each possible automobile must have a color, an engine (handy to have), and either be or not be convertible. Do not try a tree, since you will be at it a long time.