

NAME: \_\_\_\_\_

1. 060831a, P.I. A.S.19

Samuel is buying a new car. He wants either a convertible or a hatchback. Both types of cars are available in red, white, or blue and with automatic or standard transmission.

Draw a tree diagram or list a sample space of all possible choices of cars that are available.

2. 010321a, P.I. A.S.19

If Laquisha can enter school by any one of three doors and the school has two staircases to the second floor, in how many different ways can Laquisha reach a room on the second floor? Justify your answer by drawing a tree diagram or listing a sample space.

3. 010731a, P.I. A.S.19

Kimberly has three pair of pants: one black, one red, and one tan. She also has four shirts: one pink, one white, one yellow, and one green. Draw a tree diagram or list the sample space showing all possible outfits that she could wear, if an outfit consists of one pair of pants and one shirt. How many different outfits can Kimberly wear?

NAME: \_\_\_\_\_

4. 010939ia, P.I. A.S.19

A restaurant sells kids' meals consisting of one main course, one side dish, and one drink, as shown in the table below.

**Kids' Meal Choices**

Main Course	Side Dish	Drink
hamburger	French fries	milk
chicken nuggets	applesauce	juice
turkey sandwich		soda

Draw a tree diagram or list the sample space showing all possible kids' meals. How many different kids' meals can a person order? Jose does not drink juice. Determine the number of different kids' meals that do *not* include juice. Jose's sister will eat *only* chicken nuggets for her main course. Determine the number of different kids' meals that include chicken nuggets.

5. 080933ia, P.I. A.S.19

Clayton has three fair coins. Find the probability that he gets two tails and one head when he flips the three coins.

6. 089922a, P.I. A.S.19

The Grimaldis have three children born in different years.

*a* Draw a tree diagram or list a sample space to show all the possible arrangements of boy and girl children in the Grimaldi family.

*b* Using your information from part *a*, what is the probability that the Grimaldis have three boys?

7. fall0736ia, P.I. A.S.19

Mr. Laub has three children: two girls (Sue and Karen) and one boy (David). After each meal, one child is chosen at random to wash dishes. If the same child can be chosen for both lunch and dinner, construct a tree diagram or list a sample space of all the possible outcomes of who will wash dishes after lunch and dinner on Saturday. Determine the probability that one boy and one girl will wash dishes after lunch and dinner on Saturday.

- [2] A complete and correct tree diagram or sample space is shown.  
 [1] A tree diagram or sample space is shown, but one error is made.  
 [0] A tree diagram or sample space is shown, but two or more errors are made.  
 or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
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- [2] 6, and a correct tree diagram is drawn or sample space is listed.  
 [1] A correct tree diagram is drawn or sample space is listed, but no answer or an incorrect answer is found.  
 or [1] An appropriate answer is found, based on an incorrect tree diagram or sample space.  
 or [1] 6, but no tree diagram is drawn or sample space is listed.  
 [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
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- [2] 12, and a correct tree diagram or a correct sample space is shown.  
 [1] An incomplete tree diagram or sample space is shown with at least 8 possible combinations shown, and an appropriate number of outfits is found.  
 or [1] A correct tree diagram or sample space is shown, but the number of possible outfits is missing or is incorrect.  
 or [1] 12, but  $3 \times 4$  is used to find the number of outfits.  
 [0] 12, but no work is shown.  
 or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
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- [4] A correct tree diagram or sample space is given, and 18 total meals, 12 meals without juice, and 6 meals with chicken nuggets.  
 [3] A correct tree diagram or sample space is given, but either 18, 12, or 6 is missing or is incorrect.  
 or [3] The fundamental counting principle is used to find 18 total meals, 12 meals without juice, and 6 meals with chicken nuggets, but no tree diagram or sample space is given.  
 or [3] An incorrect tree diagram or sample space is given, but an appropriate number of meals is found for all three categories.  
 [2] A correct tree diagram or sample space is given, but an appropriate number of meals is found for only one category.  
 or [2] An incorrect tree diagram or sample space is given, but an appropriate number of meals is found for only two categories.  
 [1] A correct tree diagram or sample space is given, but no number of meals is found correctly.  
 or [1] An incorrect tree diagram or sample space is given, but an appropriate number of meals is found for only one category.  
 or [1] 18 total meals, 12 meals without juice, and 6 meals with chicken nuggets, but no work is shown.  
 [0] 18 total meals or 12 meals without juice or 6 meals with chicken nuggets, but no work is shown.  
 or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
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[2]  $\frac{3}{8}$  or an equivalent answer, and

appropriate work is shown.

[1] Appropriate work is shown, but one computational error is made.

or [1] Appropriate work is shown, but one conceptual error is made.

or [1] A correct tree diagram or sample space is shown, but no probability or an incorrect probability is written.

or [1]  $\frac{3}{8}$  or an equivalent answer, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[5] incorrect procedure.

a [1] A correct tree diagram or listing of all 8 possibilities is shown.

b [1]  $\frac{1}{8}$

or [1] An appropriate answer is given for an incorrect part a tree diagram or listing.

a and b

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[6] incorrect procedure.

[3]  $\frac{4}{9}$ , and a correct tree diagram or sample

space is shown.

[2] A correct tree diagram or sample space is shown, but no probability or an incorrect probability is given.

or [2] An incorrect tree diagram or sample space is shown, but an appropriate probability is found.

[1] Appropriate work is shown, but one conceptual error is made.

or [1]  $\frac{4}{9}$ , but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[7] incorrect procedure.