

*A.S.19: Determine the number of elements in a sample space and the number of favorable events.*

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. 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?

3. 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.

4. 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?

*A.S.19: Determine the number of elements in a sample space and the number of favorable events.*

[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

[1] 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

[2] 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

[3] incorrect procedure.

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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

[4] incorrect procedure.

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