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## Having Kittens & Exponential Growth Evaluate & Respond Form Model on MARS Sample Solution: Alice

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### Critique

Do you agree or disagree with the group's claim (their final answer): **We disagree.**

Whether or not you agree with the group's claim, make an argument that there is some feature of their solution that is well done and is a "best practice" strategy.

Positive evaluative claim:

**Alice's solution includes a clear timeline, allowing her to track the number of cats born at each point during the 18 months.**

**Evidence and reasoning to support your positive evaluative claim** (evidence should be a factual description of a feature of the group’s solution, and reasoning should explain why this is a “best practice” strategy):

**Alice’s entire solution to the problem is organized around her timeline. The timeline is segmented by month, with 18 marks on it, one per month. This allows her to go month by month and ask how many kittens are born each month, based on the information the poster gives about cat reproduction and on the assumptions she makes. Even though we disagree with her claim, we think that any solution should include a month-by-month organization.**

Whether or not you disagree with the group’s claim, make an argument that there is a part of their solution that is flawed, wrongly assumed, computed improperly, or incorrect.

**Critical evaluative claim:**

**Alice’s solution ignores the possible reproduction of the kittens that the first cat has, and therefore it cannot be correct.**

**Evidence and reasoning to support your critical evaluative claim** (evidence should be a factual description of a feature of the group’s solution, and reasoning should explain why this is NOT a “best practice” strategy):

**The solution’s only notation of the number of kittens born refers to the number of kittens that the original cat can have. Every four months the original cat can have as many as six kittens. But the question is how many descendants the cat can have, not how many kittens she can birth herself. Each of the kittens she has can give birth to kittens in six months, and a third and even a fourth generation can be born in 18 months. Alice’s solution doesn’t consider those additional generations so it cannot produce an accurate answer to the question.**

**Response to the evaluation of your solution:**

To the positive evaluation:

**We agree with this evaluation. We organized our solution around a timeline so we could try to be sure that we included every possible birth of kittens during the 18 month period. Any solution should include a timeline, for this same purpose.**

Response to the critical evaluation:

**We concede that our solution doesn't include all of the descendants of the original cat. We think that we have an accurate number of kittens this cat has, but her kittens can also have kittens. So we would want to revise our solution, continuing to use the same timeline that we have, but adding the next generation kittens. We're not sure, yet, if this revision would change our position on whether the original cat can have 2000 descendants in 18 months.**