Imagine using Task A and Task B in two different Algebra 1 classes. Which one do you think will elicit richer mathematical discourse from and between students? Why?

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| Task A A fisherman illegally introduces some fish into a lake, and they quickly propagate. The growth of the population of this new species (within a period of a few years) is modeled by , where *x* is the time in weeks following the introduction and *b* is a positive unknown base.a. Exactly how many fish did the fisherman release into the lake?b. Find *b* if you know the lake contains 33 fish after eight weeks. Show step-by-step work.c. Instead, now suppose that  and *b*=2. What is the weekly percent growth rate in this case? What does this mean in every-day language?(from Illustrative Mathematics Project: F-LE.A.1.c, F-LE.B.5) |

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| **Task B**  A fisherman illegally introduces some fish into a lake, and they quickly propagate. The growth of the population of this new species (within a period of a few years) is modeled by , where *x* is the time in weeks following the introduction and *b* is a positive unknown base. The Fish and Game Service would like you to investigate this problem. In particular, they want to be able to predict the number of fish in the lake at various times over the next two years so they can ask legislators for funding to eliminate the fish.Which of the following information can you find from the given information? (Explain how you know.)* The number of fish in the lake after eight weeks.
* The number of fish introduced into the lake by the fisherman.
* The rate at which the fish are increasing each week.
* The time it takes the number of fish in the lake to double.

What information can help you find a model for the Fish and Game Service? Discuss this in your group and choose ***one*** piece of information that you think will help you solve this problem. Be ready to explain why you chose this piece of information what you will do with it. * The number of fish in the lake after eight weeks.
* The number of fish introduced into the lake by the fisherman.
* The rate at which the fish are increasing each week.
* The time it takes the number of fish in the lake to double.

The teacher has the following pieces of paper providing the information students identify as needed:

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| The number of fish in the lake after eight weeks: 33 | The number of fish introduced into the lake by the fisherman: 5 |
| The rate at which the fish are increasing:  per week. | The time it takes the number of fish to double: About 2.94 weeks. |

(Adapted from Illustrative Mathematics Project: F-LE.A.1.c, F-LE.B.5) |