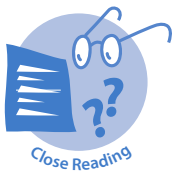
**Name:** **Date:**

## Problem-Based Task: Estimating Depreciation





| SMP | |
|---|---|
| 1 | 2 |
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| 5 ✓ | 6 ✓ |
| 7 ✓ | 8 |

Yasmina is buying a new car for $22,000. To estimate how her car will decrease in value, or depreciate, she looks at the price of older versions of the same car. She finds a similar car that is 2.5 years old. The original price of the older car was also $22,000, and its current selling price is $16,905. She knows the equation $c = 22{,}000 \cdot d^t$ can be used to estimate the value of either car, $c$, in any year $t$ since the car was originally purchased for $22,000. The value $d$ is used to calculate the new value of the car each year. Create a model to help Yasmina estimate the value of her new car, $c$, in any year $t$, if the original purchase price is $22,000. How much will Yasmina's new car be worth after 6 years?