

Homework

Modeling with Tic-Tac-Toe: Choose any three problems to complete following tic-tac-toe order. If you get all three right you win, if not I win! Choose Wisely!

<p>Liza was given \$1000 when she graduated from high school. She decided to invest it in a savings account earning 8% interest <u>compounded</u> annually to put towards her master's degree in the future. How much money will Liza have in ten years? (DOK 2)</p> <p>Equation: $A = 1000(1 + \frac{.08}{1})^{10}$</p> <p>Solution: <u>\$2158.92</u></p>	<p>River High School is overrun with cockroaches. Resources show that a thriving population of 4400 roaches are crawling through the walls. The exterminator sets up a device to help eliminate the problem which is expected to decrease the population by 12% each week. How many roaches will they have in 6 weeks? (DOK 2)</p> <p>Equation: $y = 4400(1 - .12)^6$</p> <p>Solution: <u>2044 roaches</u></p>	<p>Sarah's business ended up earning \$10,000 profit its first year open It is expected to triple its profit by 2025. How much will Sarah be making in 2025? (Current year is 2019): <u>OK</u> (DOK 1)</p> <p>Equation: $y = 10,000(3)^6$</p> <p>Solution: <u>\$7,290,000</u></p>
<p>Elk were re-introduced in north Carolina in 2001. That year, they brought in 25 elk, the following year they brought in 27. Each additional year, the population of elk increased 6%. How many elk can we predict are in North Carolina this year? (DOK 3)</p> <p>Equation: $y = 52(1 + .06)^{17}$</p> <p>Solution: <u>140 elk</u></p>	<p>Determine the balance of a \$500 investment at 8% interest <u>compounded</u> quarterly after seven years. (DOK 1)</p> <p>Equation: $A = 500(1 + \frac{.08}{4})^{28}$</p> <p>Solution: <u>\$870.51</u></p>	<p>Brad has accumulated a lot of debt buying video games over the years. He currently has a balance of \$4200 on his credit card but plans to pay half his debt each week. How much will Brad have left in six weeks? (DOK 1)</p> <p>Equation: $y = 4200(\frac{1}{2})^6$</p> <p>Solution: <u>\$65.63</u></p>
<p>Randy bought a motorcycle with his first paycheck at his new job. The motorcycle cost \$17,000 and depreciates in value by 7% each year. How much will it be worth in five years when he is ready to trade it in? (DOK 2)</p> <p>Equation: $y = 17000(1 - .07)^5$</p> <p>Solution: <u>\$11826.70</u></p>	<p>The population of Marietta has increased by 6% since you moved here in 2001. If the <u>current population</u> is 61,048, what was it when you <u>first</u> moved? (Current year is 2019). (DOK 3)</p> <p>Equation: $y = 61,048(1 + .06)^{18}$</p> <p>Solution: <u>21,300 people</u></p>	<p>If you invest \$2000 in a savings account with 10% interest compounded monthly, How much will you have in eight years? (DOK 2)</p> <p>Equation: $A = 2000(1 + \frac{.10}{12})^{96}$</p> <p>Solution: <u>\$4436.35</u></p>

$$y = ab^x$$

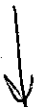
$$61,048 = a(1 + .06)^{18}$$

$$y = a(1 + r)^x$$

$$A = P(1 + \frac{r}{n})^{nt}$$

$$y = a(1 - r)^x \text{ OR } y = a(1 + r)^x$$

2002



2019