

**Algebra II Module 8 Lesson 13 – Solving Contextual Exponential Equations**

3. A new laptop computer, originally valued at \$1150, decreases at the rate of 12% per year. Suppose your friend comes to you 6 months after you purchase your laptop and wants to buy it used. He offers you \$1,000 for it. Would that be a good deal? Why or why not?

**A** \$1,000 would not be a good deal because the laptop would still be valued more than \$1,000.

Correct: Using the exponential equation,  $y = 1150(1 - .12)^x$ , where  $x$  is in years, let  $x = .5$  since the friend wants to buy it six months (half of a year) after it was purchased. Using the TABLE features on the calculator, the laptop's value would exceed \$1000 after six months.

X	Y1
0.5	1078.8
1	1012
1.5	949.34
2	890.56
2.5	835.42
3	783.69
3.5	735.17

X = .5

**B** \$1,000 would be a good deal because the laptop's value would only be worth about \$530.

Incorrect. The correct exponential function was used; however, '6' was substituted in for  $x$ . Remember,  $x$  is measured in years. .

**C** \$1,000 would not be a great deal because the value of the laptop would be \$1494.94.

Incorrect. The exponential equation is  $y = 1150(1 - .12)^x$ .

**D** There's not enough information to make an informed decision.

Incorrect. There is sufficient information.