**UNIT2 #6 EXPONENTIAL GROWTH & DECAY**

Which is bigger – Quantity A or Quantity B?

A: Quantity A is bigger

B: Quantity B is bigger

C: They are equal

D: Not enough information to decide

**QUANTITY A QUANTITY B**

The value of a car after *t* The value of a car after *t*
years as given by the equation: years as given by the equation:
V1 = 24,000(0.55)2t V2 = 24,000(0.42)t

WORK SPACE

|  |  |
| --- | --- |
| **EXPONENTIAL \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **EXPONENTIAL \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  |  |
| Y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| * Y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* a = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* r = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* t = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |

**Example 1:** A diamond ring was purchased in 1994 for $500. The value of the ring increased by 8% each year. What is the value of the ring today?

**Example 2:** This month, Sha’Myia deposits $1000 into **Example 3:** This month, Dari also deposits $1000 into her
her Hawk Metro Credit Union account at a rate of 6% her bank account. Her bank has an interest rate of 6%
interest compounded continuously. Find the amount compounded quarterly. Find the amount in her account
in her account when she graduates. when she graduates. Who has more money, Sha’Myia or
 Dari?

**Example 4:** When Coach Lawing was a freshman at West Meck in 1975, he deposited $2,340.00 into his Hawk Metro Credit Union account. The account pays interest at a rate of 3% compounded monthly. How much money is in his account today?

**Example 5:** A man purchased a brand new Outlander 800 ATV for $13,000. It depreciates at a rate of 15% per year. What is the value of the Outlander after 5 years?