

20.

VF890849

Which statement(s) can be interpreted from the equation for an automobile cost,  $C(t) = 28,000(0.73)^t$ , where  $C(t)$  represents the cost and  $t$  represents the time in years?

Select **all** correct statements.

- A. The equation is an exponential growth equation.
- B. The equation is an exponential decay equation.
- C. The equation is neither exponential decay nor exponential growth.
- D. \$28,000 represents the initial cost of an automobile that appreciates 27% per year over the course of  $t$  years.
- E. \$28,000 represents the initial cost of an automobile that appreciates 73% per year over the course of  $t$  years.
- F. \$28,000 represents the initial cost of an automobile that depreciates 27% per year over the course of  $t$  years.
- G. \$28,000 represents the initial cost of an automobile that depreciates 73% per year over the course of  $t$  years.

**Part A**

Which expression is equivalent to  $\left((1-r)^2 + r\right)\left((1-r)^2 - r\right)$ ?

- A.  $(1-r)^4 - r^2$
- B.  $2(1-r)^2 + 2r$
- C.  $(1-r)^2(1-r)(1+r)$
- D.  $(1-r)^4 + 2r(1-r)^2 + r^2$

**Part B**

Which expression is equivalent to  $\left((1-x)^2 - 2x^2\right)\left((1-x)^2 + 2x^2\right) + 4x^4$ ?

- A.  $(1-x)^4$
- B.  $2(1-x)^2 + 4x^4$
- C.  $(1-3x^2)(1+x^2) + 4x^4$
- D.  $(1-x)^4 + 4x^2(1-x)^2 + 8x^4$