

Although appealing to more refined tastes, art as a collectible has not always performed so profitably. During 2003, a sculpture was sold at auction for a price of \$10,309,500. Unfortunately for the previous owner, he had purchased it in 1999 at a price of \$12,382,500. What was his annual rate of return on this sculpture?

$$FV = PV(1 + r)^t$$

FV – amount returned,
 PV – amount invested,
 r – annual rate of return,
 t – number of years.

$$t = 2003 - 1999 = 4$$

$$r = \left(\frac{FV}{PV}\right)^{\frac{1}{t}} - 1$$

$$r = \left(\frac{10,309,500}{12,382,500}\right)^{\frac{1}{4}} - 1$$

$$r = -0,04477 \text{ or } -4,477\%$$

His annual rate of return on this sculpture was $-4,477\%$.