**Solution 1.28**

Use economic equivalence to determine the amount of money or value of *i* that makes the following statements correct.

(*a*) $5000 today is equivalent to $4275 exactly 1 year ago at *i* = \_\_\_% per year.

(*b*) A car that costs $28,000 today will cost $\_\_\_\_ a year from now at *i* = 4% per year.

(*c*) At *i* = 4% per year, a car that costs $28,000 now, would have cost $\_\_\_\_ one year ago.

(*d*) Last year, Jackson borrowed $20,000 to buy a preowned boat. He repaid the principal of the loan plus $2750 interest after only 1 year. This year, his brother Henri borrowed $15,000 to buy a car and expects to pay it off in only 1 year plus interest of $2295. The rate that each brother paid for his loan is \_\_\_ % for Jackson and \_\_\_ % per year for Henri.

(*e*) Last year, Sheila turned down a job that paid $75,000 per year. This year, she accepted one that pays $81,000 per year. The salaries are equivalent at *i* = \_\_\_\_% per year.

*Solution:*

(a) i = (5000-4275)/4275 = 0.17 (17%)

(c) Price one year later = 28,000 \* 1.04 = $29,120

(d) Price one year earlier = 28,000/1.04 = $26,923

(e) Jackson: Interest rate = (2750/20,000)\*100

= 13.75%

Henri: Interest rate = (2295/15,000)\*100

= 15.30%

(f) 81,000 = 75,000 + 75,000(i)

i = 6,000/75,000

= 0.08 (8%)