A store buys an item for $100 and marks it up 50% to sell. Later the item goes on a 50% sale. The sale price is

(a) $100  
(b) $150  
(c) $50  
(d) $75  
(e) $125  
(f) none of these

In a survey, 40% of people prefered a red car to a blue car and of these people, 60% prefered a gray interior to a tan interior. How many prefer a red car with a tan interior?

(a) 12%  
(b) 16%  
(c) 24%  
(d) 36%  
(e) 40%  
(f) none of these

A sequence or equal payments made or received over regular intervals is called

(a) fixed annuity  
(b) deferred annuity  
(c) installment loan  
(d) compounded interest  
(e) simple interest  
(f) none of these

The fixed deferred annuity formula gives the future value of an account into which pay a fixed amount periodically. The formula is given by

(a) \( F = L \frac{(1-p)^T}{1+p} \)  
(b) \( F = L \frac{(1+p)^T}{1+p} \)  
(c) \( F = L \frac{(1+p)^T-1}{p} \)  
(d) \( F = L \frac{(1-p)^T-1}{p} \)  
(e) \( F = L \frac{(1-p)^T}{p} \)  
(f) none of these
(5) Which of the following investments earns the most? (assume a fixed initial amount, no additions, compounded annually).

(a) 13 years at 3%
(b) 10 years at 4%
(c) 8 years at 5%
(d) 6 years at 6%
(e) 5 years at 10%

(6) If a 4% annual interest rate is compounded monthly the APY is approximately:

(a) 4.00%
(b) 4.01%
(c) 4.02%
(d) 4.03%
(e) 4.04%
(f) 4.45%

(7) If $1000 is deposited in a bank with 5% interest compounded annually, approximately how much is the account worth after 7 years?

(a) $1407
(b) $1340
(c) $1316
(d) $1350
(e) $1504
(f) none of these

(8) Suppose $1000 is put into an account paying 10% annually and $2000 is put into an account paying 5% annually (both compounded once a year). Approximately how many years do we have to wait for the first account to have more money than the second?

(a) 5
(b) 10
(c) 15
(d) 20
(e) 24
This table contains entries of the form

\[(1 + p)^n\]

where \(p\) is a decimal version of an interest rate and \(n\) is an integer. You may use this in place of a calculator for the problems on this exam. The top row gives the value of \(p\) and the first column gives the value of \(n\).