

ADM 2350 (Summer 2012)

SOLUTION TO QUIZ ONE

Part One

- 1.F Economic profit is net of opportunity cost which represents the investor's required rate of return. Thus zero economic profit does not imply zero rate of return.
- 2.F Rate of return less than the opportunity cost implies negative *economic* profit, not necessarily negative accounting profit.
- 3.F See the example given in Session One of the course supplement.
- 4.F NPV is calculated using the cost of financing as the discount rate. This implies that NPV may be zero, but the cost of financing used as a discount rate is recovered.

Part Two

- 1.a Economic profit : $\$1.02 \text{ m} - \$60,000 (1+.12)^{25} = \$0$
- 2.a Use Rule of 72 given in Session Two of the course supplement. In $\frac{72}{6}$ or 12 years the purchasing power will be half of what is now. In the next 12 years (e.g. 24 years from now), it will be $\frac{1}{2}$ of $\frac{1}{2} = \frac{1}{4}$ or 25% of what it is now.
- 3.b Step 1. $n = 30$ months
PV = 32,000 will give monthly rate $i=1\%$ which amounts to
PMT = 1240 12.7% as an effective annual rate of 12.7%.
- 4.d Step 1: Find annual payment by: $n = 20$; $i = 12\%$, $PV = \$100,000$, to get $PMT = \$13,387.88$
Step 2: After 3 annual payments of $\$13,387.88$, there will be 17 payments left (draw a time line to see this). Thus the principal outstanding after the third annual payments can be calculated by: $n = 17$, $i = 12\%$, $PMT = \$13,387.88$, to get $PV = \$95,327.35$.