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Group Assignment 2

1. Explain what amortization is and how a down payment and loan duration impact it.

Amortization is a gradual repayment of a loan in equal periodic installments which consist of portions of interest and principal payments over a period of time. For each periodic installment, the interest payment decreases and the payment towards the principal of the loan increases as principal balance falls.

A down payment is an initial payment a borrower makes on an asset financed with loan and it is usually expressed as a percentage of the total cost of the asset financed. The remainder of the total cost is paid in installments or with a mortgage for a property. A large down payment contributes to a lower interest rate and less loan amount resulting in a decrease in the periodic payments and shorter loan period. On the other hand, if a borrower puts down less amount of initial payment, the periodic payments would be larger with more interest payment.

Loan duration tells us regarding how long the loan is for. If the periodic payment exceeds the minimum set payment amount, this will lead to a shorten duration. The higher the payments are, the lower the duration is. Furthermore, amortization deducts the loan duration, lessening the debt's sensitivity to interest rate risk, comparing to the loan with identical maturity as well as coupon rate. The reason is the smaller payment in the future, hence the weighted-average maturity of cash flow is lower.

2. What is the importance of health insurance and disability insurance in personal financial planning?

Personal financial planning is a short or long term finance planned by an individual which can be independent or with the assistance of a professional advisor such as individual saving accounts. One of the most important part of personal financial planning is generating provisions for your family and loved ones after your death.

Health insurance is one type of insurance coverage which will pay for medical and surgical expenses that are incurred by insured. It can either repay the expenses incurred from illness or injury, or pay directly to the care provider. Normally, it is usually included in employee benefit packages which provided by company or employer. Health insurance offers many crucial benefits, for example covering essential health benefit which is important to maintain your health and treating illness and accidents, protecting unexpected and high cost of medicine, paying less cover of in-network health care and obtaining free preventive care such as vaccines, screenings, and some check-ups. Furthermore, you don't have to pay penalty that people without coverage must pay for other qualifying coverage.

Disability insurance offers an extra financial protection by replacing your income when you are unable to earn it due to a disabling injury or illness. This is because a sudden illness or injury could prevent you from working leading to loss of income as well as increasing in your expenses. Hence, disability insurance will provides benefits when you are not able to work due to disability or a serious accident. In other words, in the case of injury or illness, disability insurance can be a financial aid-whether you are unable to work for a week or more than a year. Beyond replacing income, the disability policy can help you pay for the related costs that are not covered by health insurance.

3. What is life insurance? What is its purpose and principle?

Life insurance is protection against death of the policyholder. It is a contract made between the insurer or insurance company and a policyholder that if the insured dies, the insurer will pay a sum of money as compensation to his/her family. Life insurance is one of the most useful alternatives which can ensure financial security to someone who mean the most to you e.g. husband, wife, children and parents and so on. Appropriate life insurance can make sure and aid you to prepare with uncertainty in life. It provides immediate expenses such as funeral services, unsettled hospital, medicine bill, mortgage payment and business commitments as well as provide access cash to pay for grocery bills and other daily expenses. Moreover Life insurance can help to maintain your family's standard of living and improve your credit rating since it's financial asset. Basically, life insurance has three main types which are term life, whole life and universal life. With wide range of policy option and various alternatives, optimal life insurance can offer you the maximum benefit.

The principle of life insurance is based on a mechanism called *risk pooling*, or a group sharing of losses. People exposed to a risk agree to share losses on an equitable basis. They transfer the economic risk of loss to an insurance company. Insurance collects and pools the premiums of thousands of people, spreading the risk of losses across the entire pool. By carefully calculating the probability of losses that will be sustained by the members of the pool, insurance companies can equitably (fairly) spread the cost of the losses to all the members. The risk of loss is transferred from one to many and shared by all insureds in the pool. Each person pays a premium that is measured to be fair to them and to all based on the risk they impose on the company and the pool (each class of policies should pay its own costs). If all insureds contribute a fair amount to the mortality fund held by the insurance company, there will be sufficient dollars in the fund to pay the death benefits of those insureds that die in the coming year. Individually, we do not know when we will die, but statistically, the insurer can predict with great accuracy the number of individuals that will die in a large group of individuals. The insurance company has taken an uncertainty on any individual's part, and turned it into a certainty on their part.

The purpose of life insurance is to fill in the gap of lost income when a member of family dies. Life insurance ensures that you are reimbursed for funeral and burial expenses, which means you won't permanently lose your savings or struggle to pay bills for months after the death of a loved one. Many families rely on the income of a primary breadwinner; even in families with two earners, the wages of both may be critical to meeting major expenses. The death of one earner could leave your family struggling to pay the mortgage or even be unable to afford basics such as groceries. Life insurance policies are frequently based upon your current standard of living and are designed to help your family maintain your lifestyle after the loss of income that often comes alongside a tragic death. Even if your family can survive a sudden loss of income, the death of a provider can make it challenging to save for

college, retirement and other long-term goals. Life insurance can provide a cushion that prevents you from abandoning future goals, and some life insurance policies are specifically designed to help parents ensure they have enough money to send their children to college. Life insurance also becomes a type of forced savings to save for retirement. In Thailand, some life insurance allow for tax reduction, the maximum of tax reduction is 100,000 baht.

4. Jane and Bob are both 35 years old. Although they graduated from college almost 15 years ago, they have never developed a diversified investment program. What extra money they had was invested in high-tech stocks that did quite well until the last five years. Then, with the economic downturn, they encountered major losses. How could asset allocation have reduced the dollar amounts of the Bob's losses?

Asset allocation is an investment strategy that pursues to balance risk and return by diversifying an investment portfolio among different asset classes according to the individual goal, risk tolerance, investment horizon, current financial situation, and stage in the life cycle.

Since most of high-tech stocks have a beta greater than 1 which means the security's price is more volatile than the market. Thus, during the economic downturn, these stocks that Jane and Bob are investing in would decline substantially compared to the market. Therefore, they should not put all their money in only one type of asset classes and should diversify their portfolio towards the other types of securities such as more conservative stocks, bank saving, corporate and government bonds and mutual funds. The key factor that affects asset allocation is investor's risk tolerance. Firstly, if they are conservative investors with less risk tolerance, large percentage of portfolio should be in fixed-income and money market securities. In contrast, speculative investors with more risk tolerance would invest more in equities. Hence, according to their ages, young investors like them who have high level of risk tolerance should allocate 65% to 70% of their money in equities, 20% to 25% in fixed income securities and 5% to 10% in cash and equivalents in order to lessen the risk and reduce the losses.

Suppose Jane and Bob suffer a loss of \$100,000 from the high tech stocks, and the loss is accounted to 20% of their entire portfolio, and the return rate of the fixed income securities are 5% for the last 5 years. If Jane and Bob had diversified their portfolio since they started their investment program according to the proportion above, they would have loss only \$70,000 in high tech stocks ($70\% \times 500,000 \times 20\%$). Moreover, they would have gained \$6,250 from their investment in fixed income securities. Therefore, Jane and Bob could reduce their loss from investing in high tech stocks from \$100,000 to only \$63,750 by using the technique of portfolio diversification.