

Before we begin, are there any questions from last day's work?

Today's Learning Goal(s):

By the end of the class, I will be:

- a) ready for the Ch.8_9 Summative

Today we're working on the following review:

p. 496 #1,2a,3,4,5ab,6,7,11,13abc

p. 498 #1-4,7,8c

1. Mykela's bank charges her \$11.50 per month for the first 12 transactions made against her chequing account and \$1.25 for each subsequent transaction. Last month, she made 19 transactions.

- Calculate Mykela's total bank fees last month.
- Describe two things that Mykela could do to reduce her bank fees.

$$\begin{aligned} \text{a)} \quad \text{Total} &= 11.50 + 1.25(7) \\ &= 11.50 + 8.75 \\ &= \$20.25 \end{aligned}$$

- use her card less
 - use credit card instead
 - withdraw a larger sum of cash.

- Change Banks

2. A daily interest savings account pays 0.25% interest per year when the balance in the account is under \$5000.

- a) Use the compound interest formula to calculate the interest earned on a balance of \$425 in a 31-day month.

$$A = ?$$

$$P = 425$$

$$i = \frac{0.0025}{365}$$

$$n = 31$$

$$A = P(1+i)^n$$

$$= 425 \left(1 + \frac{0.0025}{365}\right)^{31}$$

$$\approx 425.090$$

$$\approx 425.09$$

$$I = A - P$$

$$= 425.09 - 425$$

$$= \$0.09$$

09
9¢

3. Calculate the interest earned on \$425 in a 31-day month in a daily interest savings account that pays 3.50% interest per year.

$$A = ?$$

$$P = 425$$

$$i = \frac{0.035}{365}$$

$$n = 31$$

$$A = P(1+i)^n$$

$$= 425 \left(1 + \frac{0.035}{365} \right)^{31}$$

$$\doteq 426.265$$

$$\doteq 426.27$$

$$I = 426.27 - 425$$

$$I = 1.27$$

4. Last year, Gail invested \$4000 in a mutual fund. The fund had a one-year rate of return of 14.38%. The investment company charges Gail a 2.25% management fee. Calculate the current value of Gail's investment assuming that interest is paid at the end of the year.

$$I = Prt$$

$$I = ?$$

$$P = 4000$$

$$r = 0.1213$$

$$t = 1$$

$$I = Prt$$

$$= 4000(0.1213)(1)$$

$$= \$485.20$$

$$A = P + I$$

$$= 4000 + 485.20$$

$$= \$4485.20$$

$$r = 14.38\% - 2.25\%$$

$$= 12.13\%$$

5. Mohammed purchased a five-year GIC that pays 3.65% annual interest compounded annually.

a) Express the future value of the GIC as an exponential relation.

b) Use this relation to calculate the future value of the GIC at the end of the five-year period if he invests \$2000.

$$a) \quad A = P(1+i)^n$$

$$A = ? \quad A = P(1 + 0.0365)^n$$

$$P = 2000 \quad A = P(1.0365)^n$$

$$i = \frac{0.0365}{1}$$

$$n = 5 \times 1$$

$$= 5$$

$$b) \quad A = 2000(1.0365)^5$$

$$= 2392.635$$

$$= \$2392.64$$

6. Describe one advantage and one disadvantage of using a credit card.

Adv.

Quick

Build Credit Rating

Dis

Spend More than You Have

Exponential Debt Growth

7. Aiden had the brakes on his car repaired for \$344. He charged the debt to his credit card on February 10. When he received his statement, he noticed a due date of March 5. He forgot all about the bill until he received the next month's statement. He paid the bill on April 3. The bank charges 16.9% annual interest compounded daily. How much interest did Aiden's mistake cost him?

$$A = ?$$

$$P = 344$$

$$i = \frac{0.169}{365}$$

$$n = 52$$

$$\begin{aligned} I &= A - P \\ &= 352.38 - 344 \\ &= \$8.38 \end{aligned}$$

$$\begin{aligned} A &= 344 \left(1 + \frac{0.169}{365} \right)^{52} \\ &= 352.380 \\ &= 1352.38 \end{aligned}$$

11. A luxury import dealership claims its vehicles retain 92% of their value each year.

a) Determine the value of a three-year-old, ~~two-door convertible~~ that sells for ~~\$36 000~~ when new.

b) Determine the value of a five-year-old, ~~four-door sedan~~ that sells for \$87 000 when new.

$$a) \text{Value}_3 = 36000 \times (0.92)^3$$

$$\doteq 28032.768$$

$$\doteq \$28032.77$$

$$b) \text{Value}_5 = 87000 \times (0.92)^5$$

$$\doteq 57340.092$$

$$\doteq \$57340.09$$

13. Some luxury vehicles have low rates of depreciation: they "hold their value well." The table shows the value of a new luxury sedan and the values of identical models of used vehicles up to three years old.

| Age of Car (years) | Estimated Value (\$) |
|--------------------|----------------------|
| new | 67 000 |
| 1 | 58 960 |
| 2 | 50 705 |
| 3 | 43 600 |

- a) Calculate the decrease in value of the car between the first and second years.

$$\begin{aligned} \text{Decrease} &= 58\,960 - 50\,705 \\ &= 8255 \end{aligned}$$

- b) Express your answer to part a) as a percent. Round your answer to the nearest percent.

$$\% \text{ Decrease} = \frac{\text{Difference}}{\text{Original}} \times 100\%$$

$$= \frac{8255}{58960} \times 100\%$$

- c) What percent of its original value has the car lost over three years? Round your answer to one decimal place.

$$\% \text{ Decrease} = \frac{\text{Difference}}{\text{Original}} \times 100 \quad \hat{=} 14.0\%$$

$$= \frac{67\,000 - 43\,600}{67\,000} \times 100\%$$

$$= \frac{23\,400}{67\,000} \times 100$$

$$\hat{=} 34.9\%$$

$$= 35\%$$