ST. JEAN DE BREBEUF MATHEMATICS

CHAPTER 9.3

MANAGE

CREDIT CARDS

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CHAPTER 9.3 MANAGE CREDIT CARDS

KEY CONCEPTS

Interest rates charged on credit card accounts are often <u>much greater</u> than the interest rates paid on savings accounts.

Most credit cards **compound interest daily on overdue accounts**.
→An **overdue balance** is an amount that <u>remains unpaid</u> after the **due date has passed**.

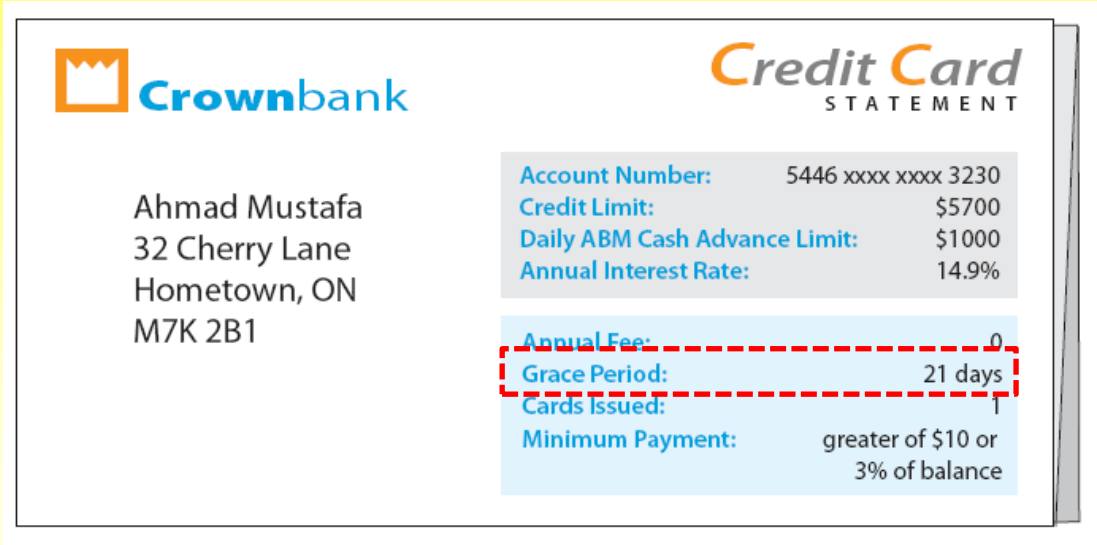
If the balance is **paid in full**, then <u>no interest</u> is charged during the **grace period**.
→A **grace period** is a length of time, often <u>days</u>, during which **no interest is charged**.

Some credit card companies offer incentives or rewards to customers for using the card to make purchases.

CHAPTER 9.3 MANAGE CREDIT CARDS

EXAMPLE *Understanding Your Credit Card*

The information found on the back of Ahmad's monthly statement for a credit card issued by his bank is shown.



(a) A statement is issued to Ahmad on the **8th** of each month. On what date will the payment be due?

The grace period is **21 days** after the statement date

→ The payment is due by the **29th** of each month

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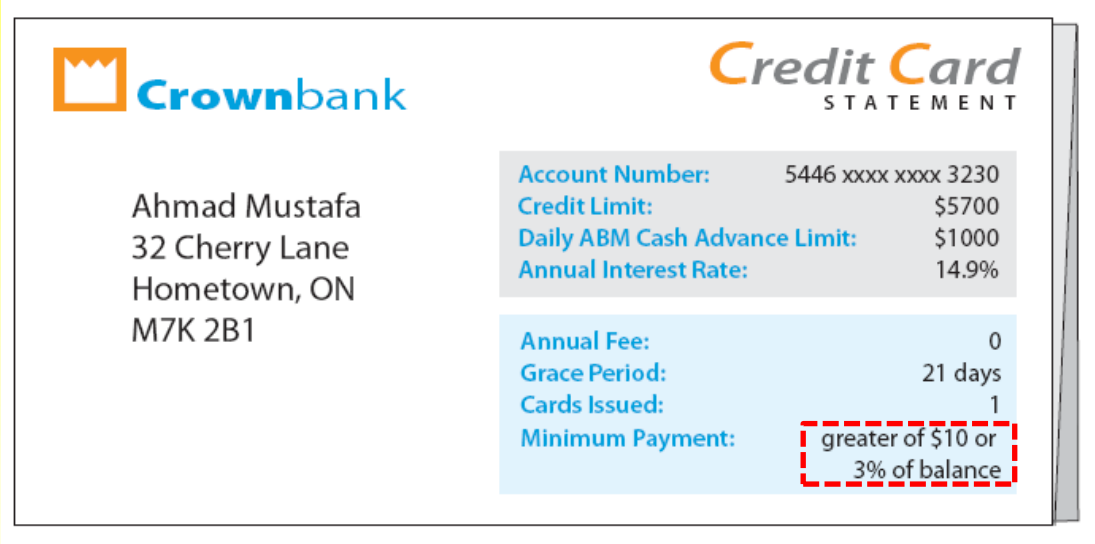

Crownbank

Credit Card STATEMENT

Ahmad Mustafa
32 Cherry Lane
Hometown, ON
M7K 2B1

Account Number:	5446 xxxx xxxx 3230
Credit Limit:	$5700
Daily ABM Cash Advance Limit:	$1000
Annual Interest Rate:	14.9%
Annual Fee:	0
Grace Period:	21 days
Cards Issued:	1
Minimum Payment:	greater of $10 or 3% of balance

(b) On <u>September's</u> statement, Ahmad has a balance of **$237.84**. Determine his **minimum payment**.

3 / 100 = **0.03**

$237.84 x 3%
= $237.84 x 0.03
= **$7.14**

(c) On <u>October's</u> statement, Ahmad has a balance of **$512**. Determine his **minimum payment**.

$512 x 3%
= $512 x 0.03
= **$15.36**

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(d) If it takes <u>three days</u> to process his payment, what is the **latest date** that Ahmad can pay October's bill and <u>not</u> be overdue?

Bill is due by **October 29**
→ Therefore Ahmad needs to pay his bill by **October 26**

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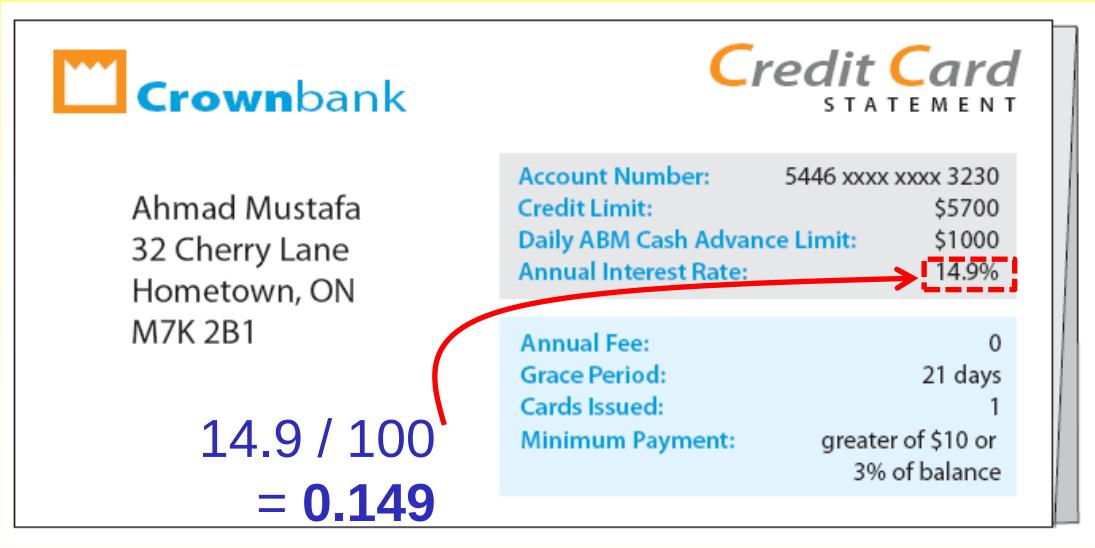

N = 365

(e) If interest is calculated and compounded daily, determine the daily interest rate. Round your answer to 4 decimal places.

$$i = \frac{Yearly\,\text{int}erest\,rate}{\#\,of\ compounding\ periods}$$

$$i = \frac{r}{N}$$

$$i = \frac{0.149}{365}$$

$$i = 0.0004082$$

The daily interest rate is **0.0004082** or **0.04082%**

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EXAMPLE *Understanding Your Credit Card*

The information found on the back of Ahmad's monthly statement for a credit card issued by his bank is shown.

(f) Calculate the **interest charged** on October's bill if it is paid in full **seven days after** the due date. He made one new purchase for **$512** on October 1.

Bill due date is **October 29**
→Seven days after October 29 is
November 5

New purchase was made on **October 1st**
→ There are 35 days between October 1st and November 5th

Express in terms of **years**
= 35 / 365
= **0.09589**

Method 1: Using the Compound Interest Formula

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

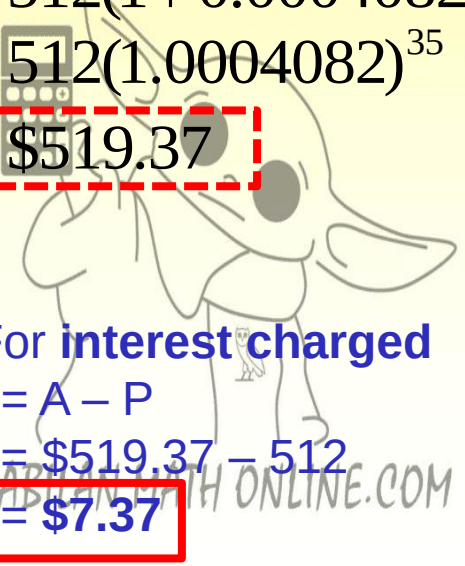
$$A = 512(1+0.0004082)^{35}$$

$$A = 512(1.0004082)^{35}$$

$$A = \$519.37$$

P = **512**
i = r / N
= 0.149 / 365
= **0.0004082**
n = yN
= 0.09589(365)
= **35**

For **interest charged**
I = A – P
= $519.37 – 512
= **$7.37**



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Method 2: Using the TVM Solver

Express in terms of **years**

ALPHA then **ENTER**

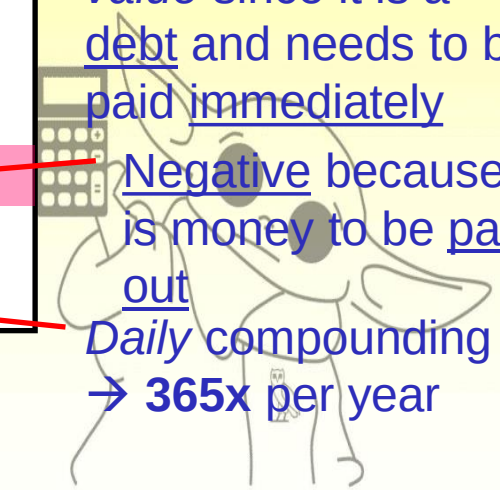
N = 35 / 365 **0.09589**
I% = **14.9**
PV = **512**
PMT = **0**
FV = 0 **– 519.37**
P/Y = **1**
C/Y = **365**

Entered as *present value* since it is a debt and needs to be paid immediately

Negative because it is money to be paid out

Daily compounding → **365x** per year

For **interest charged**
I = A – P
= $519.37 – 512
= **$7.37**



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Homework:

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