Week 4:
Compound Interest

- MA120: Personal Finance
- Instructor: Rebecca Lombardo
- Week of April 20, 2015

Review of Simple Interest: I = p r t

1.) Luther puts $300 in a savings account paying 0.53% interest. How long will it take to earn $50 in interest?

2.) Tanesha is looking to put $150 into a savings account. What interest rate does she need a savings account to have in order to have a total of $200 in the bank account 1 year from now?

Review of Simple Interest: I = p r t

1.) Luther puts $300 in a savings account paying 0.53% interest. How long will it take to earn $50 in interest?

I = p r t

t = I / pr

t = $50 / $300 x 0.53%

t = 50 / (300 x 0.0053)

t = 31.34 yrs

2.) Tanesha is looking to put $150 into a savings account. What interest rate does she need a savings account to have in order to have a total of $200 in the bank account 1 year from now?

Review of Simple Interest: I = p r t

1.) Luther puts $300 in a savings account paying 0.53% interest. How long will it take to earn $50 in interest?

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t = I / pr

t = $50 / $300 x 0.53%

t = 50 / (300 x 0.0053)

t = 31.34 yrs

2.) Tanesha is looking to put $150 into a savings account. What interest rate does she need a savings account to have in order to have a total of $200 in the bank account 1 year from now?

r = I / p t

I = $200 – $150 = $50

r = $50 / ($150 x 1)

r = 0.333 = **33.3%**

Today's Objective

- Students will use the **compound interest** formula to calculate the interest earned and total money in a savings account.

Compound Interest

Compound Interest

- **Interest** on savings account – if not withdrawn – is added to the principal after a set amount of time. This forms a new principal. The new principal earns interest for the next period of time, and then this new amount of interest gets added to form another new principal. At the end of each period of time, we have a new, higher principal! This process is known as **compound interest**.

- Interest is compounded (added to the principal) after a set constant amount of **time**…usually at the end of each year, half year, or quarter year.

Time Periods

- Annually
- Semi-annually
- Quarterly

Time Periods

- Annually – once a year
- Semi-annually
- Quarterly

Time Periods

- Annually – once a year
- Semi-annually – 2x a year (every 6 mos)
- Quarterly

Time Periods

- Annually – once a year
- Semi-annually – 2x a year (every 6 mos)
- Quarterly – 4x a year (every 3 mos)

- Generally **compound interest** is applied to many financial products → savings accounts, loans, credit cards, life insurance etc.

- In terms of our formula:

Simple Interest: $I = ptr$ $A = p + I$

Compound Interest: you must do calculations for A for <u>each</u> year of the loan

Compound Interest: Example

- You deposit $600 into a savings account. How much money do you have after 3 years if the account has a 4% interest rate, and the interest is compounded annually?

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Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1		
2					
3					

Compound Interest: Example

- You deposit $600 into a savings account. How much money do you have after 3 years if the account has a 4% interest rate, and the interest is compounded annually?

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	
2					
3					

Compound Interest: Example

- You deposit $600 into a savings account. How much money do you have after 3 years if the account has a 4% interest rate, and the interest is compounded annually?

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2					
3					

Compound Interest: Example

- You deposit $600 into a savings account. How much money do you have after 3 years if the account has a 4% interest rate, and the interest is compounded annually?

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624				
3					

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1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04			
3					

Compound Interest: Example

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1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1		
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Compound Interest: Example

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Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1	I = 624 x 0.04 x 1 = **$24.96**	
3					

Compound Interest: Example

- You deposit $600 into a savings account. How much money do you have after 3 years if the account has a 4% interest rate, and the interest is compounded annually?

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1	I = 624 x 0.04 x 1 = **$24.96**	$648.96
3					

Compound Interest: Example

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Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1	I = 624 x 0.04 x 1 = **$24.96**	$648.96
3	$648.96				

Compound Interest: Example

- You deposit $600 into a savings account. How much money do you have after 3 years if the account has a 4% interest rate, and the interest is compounded annually?

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1	I = 624 x 0.04 x 1 = **$24.96**	$648.96
3	$648.96	0.04	1		

Compound Interest: Example

- You deposit $600 into a savings account. How much money do you have after 3 years if the account has a 4% interest rate, and the interest is compounded annually?

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1	I = 624 x 0.04 x 1 = **$24.96**	$648.96
3	$648.96	0.04	1	$25.96	

Compound Interest: Example

- You deposit $600 into a savings account. How much money do you have after 3 years if the account has a 4% interest rate, and the interest is compounded annually?

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1	I = 624 x 0.04 x 1 = **$24.96**	$648.96
3	$648.96	0.04	1	$25.96	$674.92

Compound Interest: Example

- **How much total interest did you earn?**

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1	I = 624 x 0.04 x 1 = **$24.96**	$648.96
3	$648.96	0.04	1	$25.96	$674.92

Compound Interest: Example

- **How much total interest did you earn?**

A = I + p $674.92 = I + $600

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1	I = 624 x 0.04 x 1 = **$24.96**	$648.96
3	$648.96	0.04	1	$25.96	$674.92

Compound Interest: Example

- **How much total interest did you earn?**

A = I + p **$674.92 = I + $600** **I = $74.92 over 3 yrs**

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$600	0.04	1	I = 600 x 0.04 x 1 = **$24**	A= 600+ 24= **$624**
2	$624	0.04	1	I = 624 x 0.04 x 1 = **$24.96**	$648.96
3	$648.96	0.04	1	$25.96	$674.92

Problem #2

2.) You earn 1½ % interest, compounded annually, on your $2500 investment.

a) Using the table below, calculate how much your investment will be worth after 3 years. Total I = $2614.19 – 2500 = $114.19

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$2500				
2					
3					

Problem #2

2.) You earn 1½ % interest, compounded annually, on your $2500 investment.

a) Using the table below, calculate how much your investment will be worth after 3 years. Total I = $2614.19 – 2500 = $114.19

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
1	$2500	0.015	1	$37.50	$2537.50
2	$2537.50	0.015	1	$38.06	$2575.56
3	$2575.56	0.015	1	$38.63	$2614.19

Problem #3

3.) You earn 7.5% interest compounded semi-annually on your $3000 investment.

a) Using the grid below, create a table to calculate how much your investment will be worth after 2 years.

Problem #3

3.) You earn 7.5% interest compounded semi-annually on your $3000 investment.

a) Using the grid below, create a table to calculate how much your investment will be worth after 2 years.

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
0.5yr	$3000	0.075	0.5	$112.50	$3112.50
1 yr	$3112.50	0.075	0.5	$	
1.5 yr					
2 yr					

Problem #3

3.) You earn 7.5% interest compounded semi-annually on your $3000 investment.

a) Using the grid below, create a table to calculate how much your investment will be worth after 2 years.

Year #	Principal (p)	Interest Rate (r)	Time (t)	I = prt	Year End Amount (A = I + p)
0.5yr	$3000	0.075	0.5	$112.50	$3112.50
1 yr	$3112.50	0.075	0.5	$116.72	$3229.22
1.5 yr	$3229.22	0.075	0.5	$121.10	$3350.32
2 yr	$3350.32	0.075	0.5	$125.64	$3475.96

Problem #5

5.) You invest $1250 at an interest rate of 2.5% compounded quarterly. Calculate how much compound interest you will have earned on this investment after 1 year.

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Year#	P	R	T	I = prt	A = I + p
3 mos	$1250	0.025	0.25		
6 mos					
9 mos					
12 mos					

Exit Ticket

- Bryan puts $800 into a bank account. It earns ¾ % interest semi-annually. How much money will he have after 1 year?

Do Now

- Bryan puts $800 into a bank account. It earns ¾ % interest semi-annually. How much money will he have after 1 year?

Today's Objectives

- Students will:

a) Apply the compound interest formula to calculate the amount of money in a savings account after a period of time

b) Find the principal necessary for a savings account with compounded interest, given a specified money goal

Review from Tuesday

- **Compound interest** – a way of calculating interest, in which you must calculate interest and a new principal after each period of time
- We *STILL USE* the interest formula
  I = p r t
- But there are many more *STEPS*
- This results in our principals and interest amounts growing… so our money grows more quickly!! ☺

Review from Tuesday

- Annually – once a year
- Semi-annually – 2x a year (every 6 mos)
- Quarterly – 4x a year (every 3 mos)

On your own…
Please finish the
compound interest
worksheet and submit
for a grade!!!

Do Now

- Jovan puts $100 in a savings account that pays 2.2% interest compounded quarterly. How much money will Jovan have in his savings account after 9 months?

Do Now

- Jovan puts $100 in a savings account that pays 2.2% interest compounded quarterly. How much money will Jovan have in his savings account after 9 months?

Month#	P	r	t	I = prt	A = I + p
3			0.25		
6					
9					

Do Now

- Jovan puts $100 in a savings account that pays 2.2% interest compounded quarterly. How much money will Jovan have in his savings account after 9 months?

Month#	P	r	t	I = prt	A = I + p
3	$100	0.022	0.25		
6					
9					

Do Now

- Jovan puts $100 in a savings account that pays 2.2% interest compounded quarterly. How much money will Jovan have in his savings account after 9 months?

Month#	P	r	t	I = prt	A = I + p
3	$100	0.022	0.25	$0.55	$100.55
6	$100.55	0.022	0.25	$0.55	$101.10
9	$101.10	0.022	0.25	$0.56	$101.66

Which is better? Compound or Simple Interest?

- Look at your answer to #6 on the worksheet…

Simple Interest:

Compound Interest:

Which is better? Compound or Simple Interest?

- Look at your answer to #6 on the worksheet…

Simple Interest: I = 500 x 0.005 x 4 = $10 A = 500 + 10 = **$510**

Compound Interest:

Which is better? Compound or Simple Interest?

- Look at your answer to #6 on the worksheet…

Simple Interest: I = 500 x 0.005 x 4 = $10 A = 500 + 10 = **$510**

Compound Interest: 1st yr: I = 500 x 0.005 x 1 = $2.50 A = $502.50

2nd yr: I = 502.50 x 0.005 x 1 = $2.51 A = $505.01

3rd yr: I = 505.01 x 0.005 x 1 = $2.53 A = $507.54

4th yr: I = 507.54 x 0.005 x 1 = $2.54 **A = $510.08**

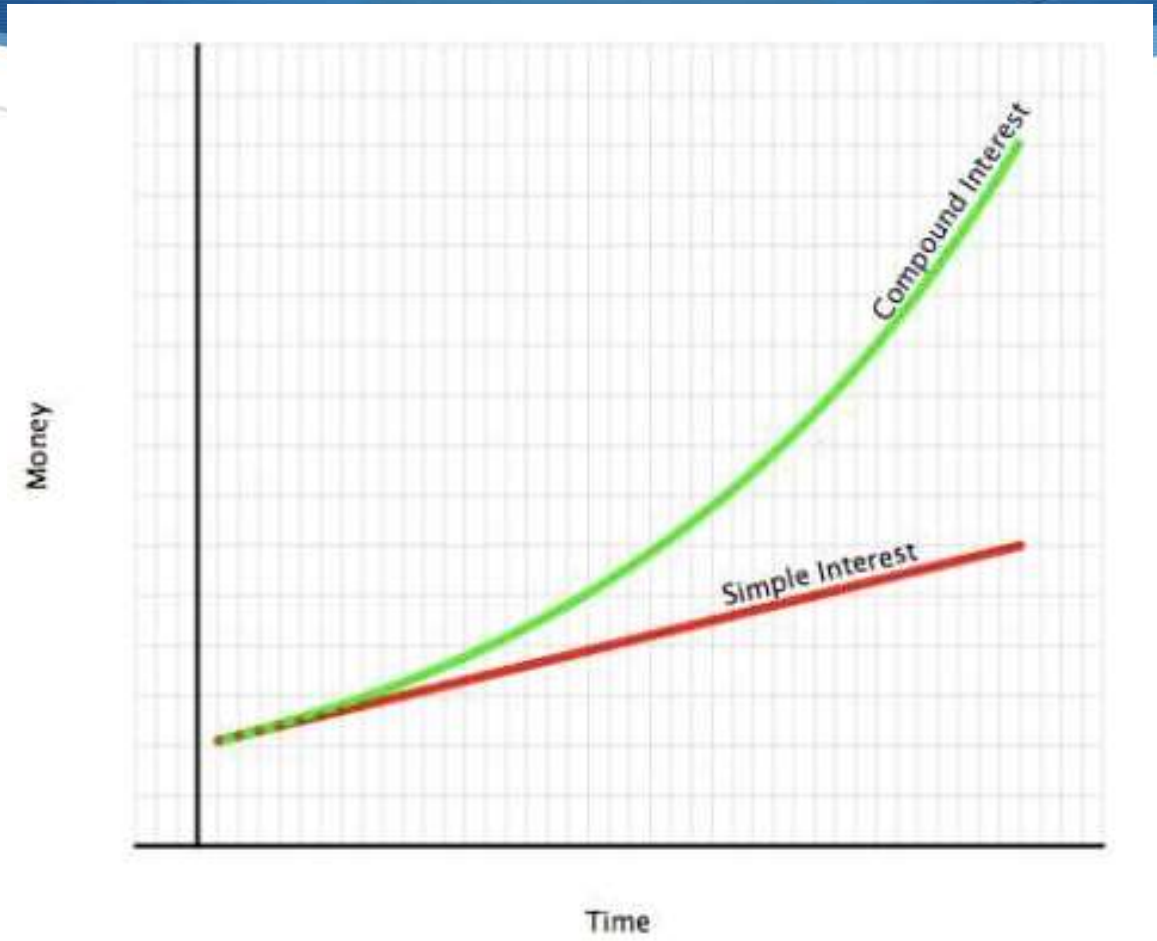
Which is better? Compound or Simple Interest?

- Look at your answer to #6 on the worksheet…

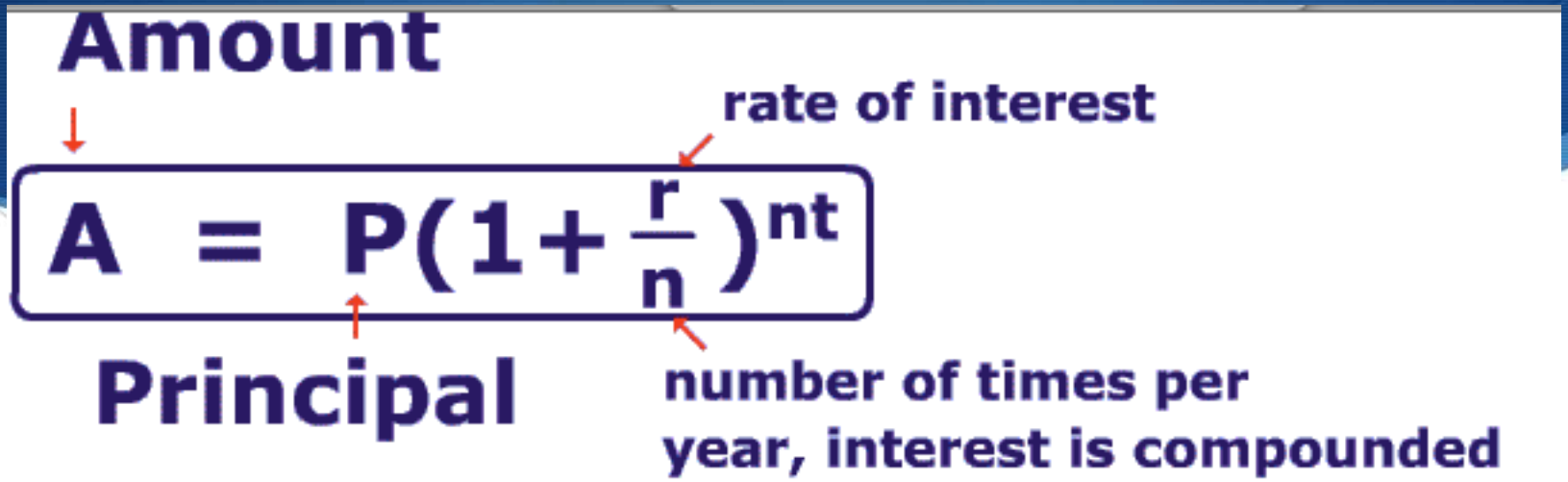
Simple Interest: **$510** after 3 years

Compound Interest: **$510.08** after 3 years

Which is better? Compound or Simple Interest?



An easier way to do Compound Interest



- A = total money in account
- p = principal
- r = interest rate
- n = number of compoundings in a year
- t = time (years)

Let's work together on the new worksheet problems

Worksheet Problem #1

1.) Shalika puts $650 into a savings account that pays 1/5 % interest per year, compounded annually. What is the amount of money that she will have after 10 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

Worksheet Problem #1

1.) Shalika puts $650 into a savings account that pays 1/5 % interest per year, compounded annually. What is the amount of money that she will have after 10 years?

P = $650 r = 1/5 % t = 10 n = 1 (annual)

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

Worksheet Problem #1

1.) Shalika puts $650 into a savings account that pays 1/5 % interest per year, compounded annually. What is the amount of money that she will have after 10 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = $650 r = 1/5 % t = 10 n = 1 (annual)

r = 0.2%

Worksheet Problem #1

1.) Shalika puts $650 into a savings account that pays 1/5 % interest per year, compounded annually. What is the amount of money that she will have after 10 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = $650 r = 1/5 % t = 10 n = 1 (annual)

r = 0.2%

r = 0.002

Worksheet Problem #1

1.) Shalika puts $650 into a savings account that pays 1/5 % interest per year, compounded annually. What is the amount of money that she will have after 10 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = $650 r = 1/5 % t = 10 n = 1 (annual)

r = 0.2%

r = 0.002

A = 650 (1 + (0.002/1))^(1 x 10)

Worksheet Problem #1

1.) Shalika puts $650 into a savings account that pays 1/5 % interest per year, compounded annually. What is the amount of money that she will have after 10 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = $650 r = 1/5 % t = 10 n = 1 (annual)

r = 0.2%

r = 0.002

A = 650 (1 + (0.002/1))^(1 x 10)

A = 663.1176262 = **$663.12**

Worksheet Problem #2

2.) Darien invests $10,000 in an account that pays 1.10% interest per year, compounded biannually. What is the amount of money that he will have after 3 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

Worksheet Problem #2

2.) Darien invests $10,000 in an account that pays 1.10% interest per year, compounded biannually. What is the amount of money that he will have after 3 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = $10,000 r = 1.10% t = 3 **n = 2**

Worksheet Problem #2

2.) Darien invests $10,000 in an account that pays 1.10% interest per year, compounded biannually. What is the amount of money that he will have after 3 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = $10,000 r = 1.10% t = 3 **n = 2**

r = 0.011

Worksheet Problem #2

2.) Darien invests $10,000 in an account that pays 1.10% interest per year, compounded biannually. What is the amount of money that he will have after 3 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = $10,000 r = 1.10% t = 3 **n = 2**

r = 0.011

A = 10,000(1 + 0.011/2)^(3 x 2)

Worksheet Problem #2

2.) Darien invests $10,000 in an account that pays 1.10% interest per year, compounded biannually. What is the amount of money that he will have after 3 years?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = $10,000 r = 1.10% t = 3 **n = 2**

r = 0.011

A = 10,000(1 + 0.011/2)^(3 x 2)

A = 10,334.57091 = **$10,334.57**

Worksheet Problem #6

6.) Tanesha has $23,478.00 in a savings account paying 0.55% interest compounded quarterly. If she initially opened the account 15 years ago and didn't add nor take out any money from the account since she opened it, how much money did she initially deposit into the account (again, we're finding the starting amount)?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

Worksheet Problem #6

6.) Tanesha has $23,478.00 in a savings account paying 0.55% interest compounded quarterly. If she initially opened the account 15 years ago and didn't add nor take out any money from the account since she opened it, how much money did she initially deposit into the account (again, we're finding the starting amount)?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

A = $23,478.00 r = 0.55% t = 15 n = 4

Worksheet Problem #6

6.) Tanesha has $23,478.00 in a savings account paying 0.55% interest compounded quarterly. If she initially opened the account 15 years ago and didn't add nor take out any money from the account since she opened it, how much money did she initially deposit into the account (again, we're finding the starting amount)?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

A = $23,478.00 r = 0.55% t = 15 n = 4

r = 0.0055

Worksheet Problem #6

6.) Tanesha has $23,478.00 in a savings account paying 0.55% interest compounded quarterly. If she initially opened the account 15 years ago and didn't add nor take out any money from the account since she opened it, how much money did she initially deposit into the account (again, we're finding the starting amount)?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

A = $23,478.00 r = 0.55% t = 15 n = 4

r = 0.0055

23,478 = P (1 + 0.0055/4)^(4 x 15)

Worksheet Problem #6

6.) Tanesha has $23,478.00 in a savings account paying 0.55% interest compounded quarterly. If she initially opened the account 15 years ago and didn't add nor take out any money from the account since she opened it, how much money did she initially deposit into the account (again, we're finding the starting amount)?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

A = $23,478.00 r = 0.55% t = 15 n = 4

r = 0.0055

23,478 = P (1 + 0.0055/4)^(4 x 15)

23,478 = P (1.085937135)

Worksheet Problem #6

6.) Tanesha has $23,478.00 in a savings account paying 0.55% interest compounded quarterly. If she initially opened the account 15 years ago and didn't add nor take out any money from the account since she opened it, how much money did she initially deposit into the account (again, we're finding the starting amount)?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

A = $23,478.00 r = 0.55% t = 15 n = 4

r = 0.0055

23,478 = P (1 + 0.0055/4)^(4 x 15)

23,478 = P (1.085937135)

÷ 1.085… ÷ 1.085…

Worksheet Problem #6

6.) Tanesha has $23,478.00 in a savings account paying 0.55% interest compounded quarterly. If she initially opened the account 15 years ago and didn't add nor take out any money from the account since she opened it, how much money did she initially deposit into the account (again, we're finding the starting amount)?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

A = $23,478.00 r = 0.55% t = 15 n = 4

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23,478 = P (1 + 0.0055/4)^(4 x 15)

23,478 = P (1.085937135)

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Worksheet Problem #6

6.) Tanesha has $23,478.00 in a savings account paying 0.55% interest compounded quarterly. If she initially opened the account 15 years ago and didn't add nor take out any money from the account since she opened it, how much money did she initially deposit into the account (again, we're finding the starting amount)?

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

A = $23,478.00 r = 0.55% t = 15 n = 4

r = 0.0055

23,478 = P (1 + 0.0055/4)^(4 x 15)

23,478 = P (1.085937135)

÷ 1.085… ÷ 1.085…

21,620.04 = P

P = $21,620.04

Do Now

- Franklyn puts $2500 into a savings account paying 1.45% interest compounded semi-annually. How much money will he have 20 years later?

Today's Objective:

- Students will calculate the total money at the maturation date for a Certificate of Deposit.

Certificates of Deposit

What is a CD??

- **Certificate of deposit (CD)** – a type of investment like a savings account, where the bank holds your money for a set period of time

What is a CD??

- **Certificate of deposit (CD)** – a type of investment like a savings account, where the bank holds your money for a set period of time

- You cannot remove your money during this time period
- Interest rates are higher than for standard savings accounts
- The longer the term (time period) of the CD, the higher the interest rate
- The more money you put in a CD, the higher the interest rate

What is a CD?

BANK OF AFRICA

GROUPE BANK OF AFRICA

Siège Social
Av. Joseph Anoma
01 B.P. 4132 Abidjan 01 COTE D'IVOIRE

ORIGINAL

CERTIFICATE OF DEPOSIT

Surname of Depositor: NENITA

Other Names: MARIO

Nationality: PHILIPPINES INT.PASSPORT NO. 9300001 Occupation: AMBASSADOR

Place of Birth (POB): PHILIPPINES Date of Birth (DOB): 19TH MAY 1945

Item deposited: CASH | WILL | BOND | VALUABLES | CLASSIFIED DOCUMENTS | VALUABLES | OTHERS (specify)

Specify amount if cash: $5,600,0000.00 (FIVE MILLION SIX HUNDRED THOUSAND UNITED STATES DOLLARS ONLY)

Date of Deposit: 02 08 2001 HTD/ MPD: Vault/TPD xx 125 – 0000kixx

Deposit code: B O A X X X X X X X (must be supplied by the beneficiary/depositor before collection)

This is to confirm that the above named person with the above particulars have a deposit with BOA ABIDJAN COTE D' IVOIRE.

BANK OF AFRICA

BHCI DIPLOMATIC & SECURITIES

22 AV. JOSEPH ANOMA
01 BP 2315 ABIDJAN 01
TEL : + 225 05 26 52 88 / FAX : +225 22 42 09 84
EMAIL : infobhci@laposte.net / infobhci@walla.com

CERTIFICATE OF DEPOSIT

SECURITY CODE MAN/CURRENCY/0111

CERTIFICATE OF DEPOSIT CODE 246/CCP/212/0401

DEPOSIT CODE FXD/CCP

SERIES: CCP/2401/P02 NUMBER: 223/CP/211

ITEM: ONE METALLIC TRUNK BOX

NAME OF DEPOSITOR : MR GEORGE

SURNAME OF DEPOSITOR : NENITA

NATIONALITY : REPUBLIC OF PHILIPPINES

PARTICULARS 84281 49 E

CLASSIFICATION OF GOODS / VALUABLE DEPOSITED FAMILY TREASURE

ITEM DEPOSITED ONE METALLIC TRUNK BOX

DATE OF DEPOSIT 22nd JANUARY 2002

BENEFICIARY FOREIGN PARTNER

MR. SMITH BENSON
Director of Operations

MR. GEORGE NENITA
Depositor

CD maturation

- **Maturation date** – the date you are able to take out your money + earned interest
- If you take our your money early, you forfeit interest + you pay a **penalty fee**!!!

Let’s compare interest rates

What did we learn today?

- **Compound interest** – interest that grows with the principal after each set increment of time

- Advantages of knowing compound interest:

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

1.) It is used more often than simple interest.

2.) It produces more **interest** (and therefore more money!! ☺) than simple interest.

Words to Remember:

- **Certificate of Deposit (CD)**
- **Rate compounded daily**
- **APY (annual per year)**
- **Maturation date**

MEVAS Bank
豐明銀行
MEVAS BANK
QUEEN'S ROAD CENTRAL BRANCH
HONG KONG

Certificate Of Deposit

This is to certify that the Depositor: RAPHAEL EITAN
Of 34 DERECH HASHALOM STREET, GIVATAYIM, ISRAEL.
Deposited the sum of US$22,500,000.00 (TWENTY TWO MILLION, FIVE HUNDRED THOUSAND USD)
A/C No: MVB631/748682/SI9
on this day 4TH of FEBRUARY 2004

This Certificate is issued in accordance with the Hong Kong Banking Act of 1968
The Depositor/Beneficiary is expected to present this certificate in the event of transfer of funds to any nominated account. Please you are to tender this Certificate only on request.

Credit Officer
General Manager
04-02-04
RAPHAEL EITAN

Exit Ticket

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

- Mr. Dukat puts $15,000 into a CD paying 0.7% compounded quarterly. How much total money will he have in his account 23 years from now?