

OTHER & TEST PAGES

1. **Unlock_all_pages**

return_url

page-locked

Mathematics of finance

1. **Amortisation**

1. **Introduction**
2. **Present value (P)**
3. **Summary**
4. **Learning objectives**
5. **Calculate payments (R)**
 1. **Video**
 2. **Formula**
 3. **Activity**
6. **The amortisation schedule**
 1. **SHARP**
 2. **Recap**
7. **Period and payments**
 1. **Period and payments**
 2. **Activity**
 3. **Increase payment**
 4. **Activity (Cont.)**
8. **Interest rate (i)**
 1. **Fixed or variable?**
 2. **Video - Part A**
 3. **Video - Part B**
 4. **Activity**
9. **Exercise**

1. **Instructions**
2. **Exercise**
10. **Assignment**

1. **Information**
2. **Questions**

2. **Annuities**

1. **Definition**
2. **Summary**
3. **Types**
 1. **Ordinary annuity and annuity due**
 2. **Annuity certain and perpetuity**
 3. **Examples**
4. **Future value (S)**
 1. **Video**
 2. **Formula**
 3. **Calculate S and R**
 4. **Calculate S - Activity**
 5. **Calculate R - Activity**
5. **Present value (P)**
 1. **Video**
 2. **Formula**
 3. **Calculate P and R**
 4. **Calculate P - Activity**
 5. **Calculate R - Activity**
6. **Relationship between P and S**
 1. **Specific cases**
 2. **Relationship between formulas**
7. **Exercise**

1. **Instructions**
2. **Exercise**
8. **Assignment**
 1. **Information**
 2. **Questions**
9. **Learning objectives**
3. **Compound interest**
 1. **Summary**
 2. **Learning objectives**
 3. **Simple and compound interest**
 1. **Introduction**
 2. **Example**
 3. **Simple interest amount**
 4. **Compound interest amount**
 4. **How it works**
 1. **How it works 2**
 2. **How it works 1**
 3. **Activity**
 5. **Calculate S**
 1. **Formula**
 2. **Example**
 3. **Activity**
 6. **Compounding periods**
 1. **Compounding periods**
 2. **Semi-annually**
 3. **Yearly**
 4. **Quarterly and monthly**
 5. **All together**

6. **Activity 1**
7. **Activity 2**
8. **Activity 3**
7. **Calculate P**
 1. **Calculate P**
 2. **Activity**
8. **Calculate n and i**
 1. **Calculate n and i**
 2. **Calculate n - Activity**
 3. **Calculate i - Activity**
9. **Exercise**
 1. **Instructions**
 2. **Exercise**
10. **Assignment**
 1. **Information**
 2. **Questions**
4. **Simple discount**
 1. **Summary**
 2. **Formula**
 3. **Time line**
 4. **Learning objectives**
 5. **Introduction**
 1. **Video**
 2. **Introduction**
 6. **Activities**
 1. **Activity 1**
 2. **Activity 2**
 3. **Activity 3**

7. **Simple interest vs. simple discount**
 1. **Examples of each**
 2. **Comparing**
8. **Exercise**
 1. **Instructions**
 2. **Exercise**
9. **Assignment**
 1. **Information**
 2. **Questions**
5. **Simple interest**
 1. **Summary**
 2. **Introduction**
 3. **Simple Interest Formula**
 4. **Annum and year**
 5. **Time line**
 6. **Accumulated Sum Formula**
 7. **Calculate I - Activity**
 8. **Learning objectives**
 9. **Borrowers and investors**
 1. **Borrower**
 2. **Investor**
 10. **How it works**
 1. **How it works**
 2. **The interest amount**
 11. **Calculate S**
 1. **Activity**
 12. **Calculate P**
 1. **Change Subject of Formula**

2. **Present Value**
 3. **Activity 1**
 4. **Activity 2**
13. **Calculate n**
 1. **Recap**
 2. **Activity 1**
 3. **Activity 2**
14. **Calculate i**
 1. **Recap**
 2. **Activity 1**
15. **Exercise**
 1. **Instructions**
 2. **Exercise**
16. **Assignment**
 1. **Information**
 2. **Questions**
6. **Time value of money**
 1. **Summary**
 2. **Introduction**
 3. **Time line**
 4. **Learning objectives**
 5. **Time and money**
 1. **Time and money**
 2. **Present and future values**
 3. **Example**
 6. **Moving repayments**
 1. **Forwards and backwards**
 2. **Rules**

3. **Recap**
4. **Activity**
7. **Replacing financial obligations**
 1. **Example**
 2. **Replacing financial obligations**
 3. **Activity 1**
 4. **Activity 2**
8. **Exercise**
 1. **Instructions**
 2. **Exercise**
9. **Assignment**
 1. **Information**
 2. **Questions**

Functions and representations of functions

1. **Definition of functions**
 1. **Graphing functions**
 2. **Summary**
 3. **Learning objectives**
 4. **Variables**
 1. **Variable**
 2. **Mathematical expressions**
 3. **Variables in expressions**
 4. **Variables in formulas**
5. **Formula**
 1. **Definition**
 2. **Advantage**
 3. **Dependence**
 4. **Activity 1**

5. **Activity 2**

6. **Activity 3**

6. **Function**

1. **Concept**

2. **Name**

3. **Examples**

4. **A function**

5. **Not a function**

6. **Independent variables**

7. **Function notation**

1. **Notation**

2. **Example**

3. **Activity**

8. **The Cartesian plane**

1. **Introduction**

2. **Axes**

3. **Quadrants**

4. **Direction - Activity**

5. **Coordinates - Activity**

9. **Exercise**

1. **Instructions**

2. **Exercise**

10. **Assignment**

1. **Information**

2. **Questions**

2. **Linear functions**

1. **Summary**

2. **Special case: Parallel lines**

3. Learning objectives

4. Characteristics

1. **Equation**
2. **Values of a and b**
3. **y-intercept**
4. **x-intercept**
5. **Recap**
6. **Activity**

5. Draw the graph

1. **Two points**
2. **Video**
3. **Activity**

6. Slope

1. **Definition - Video**
2. **Ratio of change - Video**
3. **Negative slope - Video**
4. **Recap**
5. **Four cases - Activity**
6. **$\frac{3}{4}$; $\frac{4}{3}$ - Activity**

7. Determine equation

1. **Two points**
2. **Word problems**
3. **Activity 1**
4. **Activity 2**

8. Special case: $b = 0$

1. **Example**
2. **Recap**
3. **Through origin**

4. **Activity**
9. **Special case: $a = 0$**
 1. **Horizontal**
 2. **Examples**
 3. **Slope**
 4. **Activity**
10. **Special case: Parallel to y-axis**
 1. **Video**
 2. **Examples**
 3. **Slope**
 4. **Activity**
11. **Recap - Activity**
12. **Exercise**
 1. **Instructions**
 2. **Exercise**
13. **Assignment**
 1. **Information**
 2. **Questions**
3. **Exponential and logarithmic functions**
 1. **Summary**
 2. **Learning objectives**
 3. **Exponential functions**
 1. **Equation**
 2. **Introduction**
 3. **Examples**
 4. **$x > 0$; $x < 0$**
 5. **$x > 0$; $x < 0$ - Video**
 6. **$a > 1$; $0 < a < 1$**

7. **$a > 1$; $0 < a < 1$ - Recap**

8. **$x > 0$; $x < 0$ - Activity**

9. **$a > 1$; $0 < a < 1$ - Activity**

4. Logarithmic functions

1. **Inverse function**

2. **Equation**

3. **Example**

4. **In general**

5. **Graph**

6. **Activity 1**

7. **Activity 2**

5. Exercise

1. **Instructions**

2. **Exercise**

6. Assignment

1. **Information**

2. **Questions**

4. Quadratic functions

1. **Summary**

2. **Shape of graph**

3. **Learning objectives**

4. **Introduction**

1. **Practical applications**

2. **Projectile motion**

5. **Equation**

1. **Equation**

2. **Activity**

6. **Vertex**

1. **y-coordinate**
2. **x-coordinate**
3. **Coordinates - Activity**
7. **Intercepts**
 1. **y-axis**
 2. **x-axis**
 3. **Intercepts - Activity**
8. **Discriminant**
 1. **Two x-intercepts**
 2. **One x-intercept**
 3. **No x-intercepts**
 4. **Specific cases - Activity**
 5. **Recap - Activity**
9. **Draw the graph**
 1. **Steps**
 2. **Example**
 3. **Activity**
10. **Activity - Changes in a, b and c**
11. **Slope**
 1. **Not constant**
 2. **Video**
12. **Exercise**
 1. **Instructions**
 2. **Exercise**
13. **Assignment**
 1. **Information**
 2. **Questions**

Linear systems

1. Linear equations in one variable

1. Summary

2. Learning objectives

3. Solve

1. Video 1

2. Video 2

3. Examples

4. Steps

5. Step-by-step - Activity

6. Now you try - Activity

4. Word problems

1. Example

2. Activity

5. Solve by x-intercept

1. Determine x-intercept

2. Activity

6. Exercise

1. Instructions

2. Exercise

7. Assignment

1. Information

2. Questions

2. Systems of linear equations in two variables

1. Summary

2. Learning objectives

3. Systems of equations

1. Introduction

2. The system

4. Solve: Graphing

- 1. Video**
- 2. Activity**

5. Solve: Substitution

- 1. Video**
- 2. Example**
- 3. Activity**

6. Solve: Elimination

- 1. Video 1**
- 2. Video 2**
- 3. Activity**

7. Solve: Any method - Activity

8. Word problems

- 1. Example**
- 2. Activity**

9. Exercise

- 1. Instructions**
- 2. Exercise**

10. Assignment

- 1. Information**
- 2. Questions**

3. Linear inequalities in one variable

- 1. Summary**
- 2. Learning objectives**
- 3. Introduction**
 - 1. $>$ and $<$**
 - 2. " $>$ and =" and " $<$ and ="**
- 4. Solve**

1. **Rules 1 & 2**
2. **Rule 5**
3. **Rules 3 & 4**
4. **Example**
5. **Activity**
5. **Miscellaneous**
 1. **Four types**
 2. **Variable on right side**
 3. **Multiply or divide by variable**
 4. **Activity**
6. **Word problems**
 1. **Example**
 2. **Key words**
 3. **Activity**
7. **Exercise**
 1. **Instructions**
 2. **Exercise**
8. **Assignment**
 1. **Information**
 2. **Questions**
4. **Systems of linear inequalities in two variables**
 1. **Summary**
 2. **No solution**
 3. **Learning objectives**
 4. **Linear inequality**
 1. **Video**
 2. **Boundary line**
 3. **Activity 1 recap**

4. **Activity 1**
5. **Activity 2**
5. **Systems of two linear inequalities**
 1. **Video**
 2. **Example**
 3. **Activity 1**
 4. **Activity 2**
6. **Systems of more linear inequalities**
 1. **Example**
 2. **Activity**
7. **Word problems**
 1. **Example**
 2. **Activity**
8. **Exercise**
 1. **Instructions**
 2. **Exercise**
9. **Assignment**
 1. **Information**
 2. **Questions**

An application of differentiation

1. **Marginal cost1**
 1. **Summary**
 2. **Calculate - Non-linear function: Video**
 3. **Learning objectives**
 4. **Total, fixed and variable cost**
 1. **Introduction**
 2. **Example**
 3. **Cost as a function**

5. **Marginal cost**
 1. **Introduction**
 2. **Three methods**
6. **Calculate - Table**
 1. **Example**
 2. **Activity**
7. **Calculate - Linear function**
 1. **Linear relationship**
 2. **Slope**
 3. **Video**
 4. **Constant change**
 5. **Activity**
8. **Time for practice - Activity**
9. **Derivatives and slope**
 1. **Differentiation rules**
 2. **Activity 1**
 3. **Activity 2**
10. **Non-linear function**
 1. **Farmer example**
 2. **Farmer example (Cont.)**
 3. **Farmer recap**
 4. **Farmer activity**
11. **Exercise**
 1. **Instructions**
 2. **Exercise**
12. **Assignment**
 1. **Information**
 2. **Questions**

2. Marginal profit

1. Summary

2. Learning objectives

3. Profit

1. Introduction

2. Farmer

3. Activity

4. Marginal profit

1. Farmer

2. Farmer (Cont.)

5. Marginal functions

1. Video

2. Recap

3. Activity

6. Time for practice - Activity

7. Exercise

1. Instructions

2. Exercise

8. Assignment

1. Information

2. Questions

Welcome

- 1. Please select here for instructions before proceeding**

Table of Contents

OTHER & TEST PAGES	1
Unlock_all_pages	1
return_url	1
page-locked	1
Mathematics of finance	1
Amortisation	1
Introduction	1
Present value (P)	1
Summary	1
Learning objectives	1
Calculate payments (R)	1
Video	1
Formula	1
Activity	1
The amortisation schedule	1
SHARP	1
Recap	1
Period and payments	1
Period and payments	1
Activity	1
Increase payment	1
Activity (Cont.)	1
Interest rate (i)	1
Fixed or variable?	1
Video - Part A	1
Video - Part B	1
Activity	1
Exercise	1
Instructions	2
Exercise	2
Assignment	2
Information	2
Questions	2
Annuities	2
Definition	2
Summary	2
Types	2
Ordinary annuity and annuity due	2
Annuity certain and perpetuity	2
Examples	2
Future value (S)	2
Video	2
Formula	2
Calculate S and R	2
Calculate S - Activity	2
Calculate R - Activity	2
Present value (P)	2
Video	2
Formula	2
Calculate P and R	2

Calculate P - Activity	2
Calculate R - Activity	2
Relationship between P and S	2
Specific cases	2
Relationship between formulas	2
Exercise	2
Instructions	3
Exercise	3
Assignment	3
Information	3
Questions	3
Learning objectives	3
Compound interest	3
Summary	3
Learning objectives	3
Simple and compound interest	3
Introduction	3
Example	3
Simple interest amount	3
Compound interest amount	3
How it works	3
How it works 2	3
How it works 1	3
Activity	3
Calculate S	3
Formula	3
Example	3
Activity	3
Compounding periods	3
Compounding periods	3
Semi-annually	3
Yearly	3
Quarterly and monthly	3
All together	3
Activity 1	4
Activity 2	4
Activity 3	4
Calculate P	4
Calculate P	4
Activity	4
Calculate n and i	4
Calculate n and i	4
Calculate n - Activity	4
Calculate i - Activity	4
Exercise	4
Instructions	4
Exercise	4
Assignment	4
Information	4
Questions	4
Simple discount	4
Summary	4

Formula	4
Time line	4
Learning objectives	4
Introduction	4
Video	4
Introduction	4
Activities	4
Activity 1	4
Activity 2	4
Activity 3	4
Simple interest vs. simple discount	5
Examples of each	5
Comparing	5
Exercise	5
Instructions	5
Exercise	5
Assignment	5
Information	5
Questions	5
Simple interest	5
Summary	5
Introduction	5
Simple Interest Formula	5
Annum and year	5
Time line	5
Accumulated Sum Formula	5
Calculate I - Activity	5
Learning objectives	5
Borrowers and investors	5
Borrower	5
Investor	5
How it works	5
How it works	5
The interest amount	5
Calculate S	5
Activity	5
Calculate P	5
Change Subject of Formula	5
Present Value	6
Activity 1	6
Activity 2	6
Calculate n	6
Recap	6
Activity 1	6
Activity 2	6
Calculate i	6
Recap	6
Activity 1	6
Exercise	6
Instructions	6
Exercise	6
Assignment	6

Information	6
Questions	6
Time value of money	6
Summary	6
Introduction	6
Time line	6
Learning objectives	6
Time and money	6
Time and money	6
Present and future values	6
Example	6
Moving repayments	6
Forwards and backwards	6
Rules	6
Recap	7
Activity	7
Replacing financial obligations	7
Example	7
Replacing financial obligations	7
Activity 1	7
Activity 2	7
Exercise	7
Instructions	7
Exercise	7
Assignment	7
Information	7
Questions	7
Functions and representations of functions	7
Definition of functions	7
Graphing functions	7
Summary	7
Learning objectives	7
Variables	7
Variable	7
Mathematical expressions	7
Variables in expressions	7
Variables in formulas	7
Formula	7
Definition	7
Advantage	7
Dependence	7
Activity 1	7
Activity 2	8
Activity 3	8
Function	8
Concept	8
Name	8
Examples	8
A function	8
Not a function	8
Independent variables	8
Function notation	8

Notation	8
Example	8
Activity	8
The Cartesian plane	8
Introduction	8
Axes	8
Quadrants	8
Direction - Activity	8
Coordinates - Activity	8
Exercise	8
Instructions	8
Exercise	8
Assignment	8
Information	8
Questions	8
Linear functions	8
Summary	8
Special case: Parallel lines	8
Learning objectives	9
Characteristics	9
Equation	9
Values of a and b	9
y-intercept	9
x-intercept	9
Recap	9
Activity	9
Draw the graph	9
Two points	9
Video	9
Activity	9
Slope	9
Definition - Video	9
Ratio of change - Video	9
Negative slope - Video	9
Recap	9
Four cases - Activity	9
3/4; 4/3 - Activity	9
Determine equation	9
Two points	9
Word problems	9
Activity 1	9
Activity 2	9
Special case: $b = 0$	9
Example	9
Recap	9
Through origin	9
Activity	10
Special case: $a = 0$	10
Horizontal	10
Examples	10
Slope	10
Activity	10

Special case: Parallel to y-axis	10
Video	10
Examples	10
Slope	10
Activity	10
Recap - Activity	10
Exercise	10
Instructions	10
Exercise	10
Assignment	10
Information	10
Questions	10
Exponential and logarithmic functions	10
Summary	10
Learning objectives	10
Exponential functions	10
Equation	10
Introduction	10
Examples	10
$x > 0$; $x < 0$	10
$x > 0$; $x < 0$ - Video	10
$a > 1$; $0 < a < 1$	10
$a > 1$; $0 < a < 1$ - Recap	11
$x > 0$; $x < 0$ - Activity	11
$a > 1$; $0 < a < 1$ - Activity	11
Logarithmic functions	11
Inverse function	11
Equation	11
Example	11
In general	11
Graph	11
Activity 1	11
Activity 2	11
Exercise	11
Instructions	11
Exercise	11
Assignment	11
Information	11
Questions	11
Quadratic functions	11
Summary	11
Shape of graph	11
Learning objectives	11
Introduction	11
Practical applications	11
Projectile motion	11
Equation	11
Equation	11
Activity	11
Vertex	11
y-coordinate	12
x-coordinate	12

Coordinates - Activity	12
Intercepts	12
y-axis	12
x-axis	12
Intercepts - Activity	12
Discriminant	12
Two x-intercepts	12
One x-intercept	12
No x-intercepts	12
Specific cases - Activity	12
Recap - Activity	12
Draw the graph	12
Steps	12
Example	12
Activity	12
Activity - Changes in a, b and c	12
Slope	12
Not constant	12
Video	12
Exercise	12
Instructions	12
Exercise	12
Assignment	12
Information	12
Questions	12
Linear systems	12
Linear equations in one variable	13
Summary	13
Learning objectives	13
Solve	13
Video 1	13
Video 2	13
Examples	13
Steps	13
Step-by-step - Activity	13
Now you try - Activity	13
Word problems	13
Example	13
Activity	13
Solve by x-intercept	13
Determine x-intercept	13
Activity	13
Exercise	13
Instructions	13
Exercise	13
Assignment	13
Information	13
Questions	13
Systems of linear equations in two variables	13
Summary	13
Learning objectives	13
Systems of equations	13

Introduction	13
The system	13
Solve: Graphing	14
Video	14
Activity	14
Solve: Substitution	14
Video	14
Example	14
Activity	14
Solve: Elimination	14
Video 1	14
Video 2	14
Activity	14
Solve: Any method - Activity	14
Word problems	14
Example	14
Activity	14
Exercise	14
Instructions	14
Exercise	14
Assignment	14
Information	14
Questions	14
Linear inequalities in one variable	14
Summary	14
Learning objectives	14
Introduction	14
> and <	14
"> and =" and "< and ="	14
Solve	14
Rules 1 & 2	15
Rule 5	15
Rules 3 & 4	15
Example	15
Activity	15
Miscellaneous	15
Four types	15
Variable on right side	15
Multiply or divide by variable	15
Activity	15
Word problems	15
Example	15
Key words	15
Activity	15
Exercise	15
Instructions	15
Exercise	15
Assignment	15
Information	15
Questions	15
Systems of linear inequalities in two variables	15
Summary	15

No solution	15
Learning objectives	15
Linear inequality	15
Video	15
Boundary line	15
Activity 1 recap	15
Activity 1	16
Activity 2	16
Systems of two linear inequalities	16
Video	16
Example	16
Activity 1	16
Activity 2	16
Systems of more linear inequalities	16
Example	16
Activity	16
Word problems	16
Example	16
Activity	16
Exercise	16
Instructions	16
Exercise	16
Assignment	16
Information	16
Questions	16
An application of differentiation	16
Marginal cost ¹	16
Summary	16
Calculate - Non-linear function: Video	16
Learning objectives	16
Total, fixed and variable cost	16
Introduction	16
Example	16
Cost as a function	16
Marginal cost	17
Introduction	17
Three methods	17
Calculate - Table	17
Example	17
Activity	17
Calculate - Linear function	17
Linear relationship	17
Slope	17
Video	17
Constant change	17
Activity	17
Time for practice - Activity	17
Derivatives and slope	17
Differentiation rules	17
Activity 1	17
Activity 2	17
Non-linear function	17

Farmer example	17
Farmer example (Cont.)	17
Farmer recap	17
Farmer activity	17
Exercise	17
Instructions	17
Exercise	17
Assignment	17
Information	17
Questions	17
Marginal profit	18
Summary	18
Learning objectives	18
Profit	18
Introduction	18
Farmer	18
Activity	18
Marginal profit	18
Farmer	18
Farmer (Cont.)	18
Marginal functions	18
Video	18
Recap	18
Activity	18
Time for practice - Activity	18
Exercise	18
Instructions	18
Exercise	18
Assignment	18
Information	18
Questions	18
Welcome	18
Please select here for instructions before proceeding	18
Table of Contents	19