

## GFP Maths Placement Test

<b>Course Code:</b>	SET 1
<b>Course Name:</b>	Basic Mathematics
<b>Pass Mark:</b>	50%
<b>Involved Students</b>	<p>SET 1 is the first Mathematics course in GFP for students who are going to study:</p> <ul style="list-style-type: none"> <li>- Business</li> <li>- Computing and Information Technology</li> <li>- English Study in Faculty of Arts and Education</li> <li>- Engineering</li> <li>- Languages Study</li> </ul>
<b>Course Learning Outcomes:</b>	
On successful completion of this course, students will be able to:	
1.	Describe the set of real numbers, all its subsets and their relationship.
2.	Identify and use the arithmetic properties of subsets of integers, rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable.
3.	Determine the laws of exponents and apply them to simplify expression.
4.	Determine the laws of radicals and apply them to simplify expression.
5.	Manipulate fractions and percentages.
6.	Manipulate decimals and ratios.
7.	Determine the measurements and conversion from one unit to another.
8.	Determine the basic Algebra concepts such as variables, terms, expressions, Brackets, factorization, etc.
9.	Determine the polynomials and rational expressions, perform operations on polynomials, manipulate numerical and polynomial expressions, simplify rational expressions, and rationalize numerators or denominators.
10.	Solve first degree equations, and equations involving radicals and fractional expression.
11.	Translate worded problems into mathematical expression and model simple real life problems with linear equations.
12.	Use the quadratic formula to find roots of a second-degree polynomial and translate worded problems into mathematical expression and model simple real life problems with quadratic equations.
13.	Solve linear inequalities and translate worded problems into mathematical expression and model simple real life problems with linear inequalities.

14.	Know the relationship between degree and radian measure of an angle and find the length of a circular arc and the area of a sector.
15.	Determine the trigonometric and circular functions and use the fundamental trigonometric identities in various problems.
16.	Solve right-angled triangles using angles of elevation and depression.

### SET 1 Course Materials:

click the *Handout* and *Tutorial sheets'* links below to download the course materials.

#### **Chapter 1: The Basics**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 2: Exponents and Radicals**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 3: Fractions, Decimals, Ratios and Percentages**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 4: Measurement**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 5: Algebra**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 6: Simple Equations**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 7: Quadratic Equations**

[Handout](#)

[Tutorial Sheet](#)

### **Chapter 8: Inequalities**

[Handout](#)

[Tutorial Sheet](#)

### **Chapter 9: Trigonometry**

[Handout](#)

[Tutorial Sheet](#)

## GFP Maths Placement Test

<b>Course Code:</b>	SET 2
<b>Course Name:</b>	Applied Mathematics
<b>Pass Mark:</b>	50%
<b>Involved Students</b>	<p>SET 2 is the second and last course of Mathematics study in GFP for students who are going to study:</p> <ul style="list-style-type: none"> <li>- Business</li> <li>- English Study in Faculty of Arts and Education</li> <li>- Languages Study,</li> </ul> <p>if they already passed SET 1 placement test with a score of 75% or above.</p>
<b>Course Learning Outcomes:</b>	
On successful completion of this course, students will be able to:	
1.	Use coordinate plane to solve algebraic and geometric problem, and understand geometric concepts such as equation of a line, perpendicular, parallel, and tangent lines.
2.	Determine the geometric concept of equation of a circle and use the three types of symmetry of an equation to sketch its graph.
3.	Determine the inverse relationship between exponents and logarithms and use this relationship to solve related problems.
4.	Solve exponential and logarithmic equations.
5.	Determine the basic concepts of descriptive statistics, mean, median, mode and summarize data into tables and simple graphs (bar charts, histogram, and pie chart).
6.	Determine the basic probability concepts and compute the probability of simple events using tree diagrams and formulas for permutations and combinations.
7.	Solve quadratic equations and inequalities.
8.	Solve two variables linear equations and inequalities and sketch their graph.
9.	Interpret a series of three simultaneous inequalities of two variables, display them graphically and determine the solution set.
10.	Compare simple and compound interest and relate compound interest to exponential growth.

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|-----|---|
| 11. | Determine the definition of a function and its graph and sketch the graphs of quadratic, exponential, and logarithmic functions.                          |
| 12. | Determine the zeros and the maximum or minimum of a quadratic function, and solve related problems, including those arising from real world applications. |
| 13. | Solve simple real life problems involving linear, quadratic, and exponential functions graphically and algebraically.                                     |

## SET 2 Course Materials:

Click the **Handout** and **Tutorial sheets'** links below to download the course materials.

### Chapter 1: Analytic Geometry

[Handout](#)

[Tutorial Sheet](#)

### Chapter 2: Logarithms

[Handout](#)

[Tutorial Sheet](#)

### Chapter 3: Statistics

[Handout](#)

[Tutorial Sheet](#)

### Chapter 4: Probability

[Handout](#)

[Tutorial Sheet](#)

### Chapter 5: Quadratic Equations and Inequalities in One Variable

[Handout](#)

[Tutorial Sheet](#)

### Chapter 6: Linear Equations and Inequalities in Two Variables

[Handout](#)

[Tutorial Sheet](#)

## **Chapter 7: Simple and Compound Interest**

[Handout](#)

[Tutorial Sheet](#)

## **Chapter 8: Functions and Their Graphs**

[Handout](#)

[Tutorial Sheet](#)

## GFP Math's Placement Test

<b>Course Code:</b>	SET 3
<b>Course Name:</b>	Pure Mathematics
<b>Pass Mark:</b>	50%
<b>Involved Students</b>	SET 2 is the second and last course of Mathematics study in GFP for students who are going to study: <ul style="list-style-type: none"> <li>- Computing and Information Technology</li> <li>- Engineering,</li> </ul> if they already passed SET 1 placement test with a score of 75% or above.

### Course Learning Outcomes:

On successful completion of this course, students will be able to:

1. Use coordinate plane to solve algebraic and geometric problem, and understand geometric concepts such as equation of a line, perpendicular, parallel, and tangent lines.
2. Determine the geometric concept of equation of a circle and use the three types of symmetry of an equation to sketch its graph.
3. Determine the inverse relationship between exponents and logarithms and use this relationship to solve related problems.
4. Define and manipulate exponential and logarithmic functions and solve problems arising from real life applications.
5. Use appropriate software to interpret equations and graphs.
6. Determine the basic concepts of descriptive statistics, mean, median, mode and summarize data into tables and simple graphs (bar charts, histogram, and pie chart).
7. Determine the basic probability concepts and compute the probability of simple events using tree diagrams and formulas for permutations and combinations.
8. Solve quadratic equations using quadratic formula.
9. Determine the definition of the different types of angles and measure them in degrees and radians.
10. Determine the trigonometric identities.

11. Use the law of sines and cosines to solve a triangle and real life problems.
12. Determine the definition of a function and its graph and describe analytically the trigonometric and circular functions.

### SET 3 Course Materials:

Click the *Handout* and *Tutorial sheets'* links below to download the course materials.

#### **Chapter 1: Analytic Geometry**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 2: Logarithms**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 3: Statistics**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 4: Probability**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 5: Quadratic Equations in One Variable**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 6: Trigonometry**

[Handout](#)

[Tutorial Sheet](#)

#### **Chapter 7: Functions and Their Graphs**

[Handout](#)

[Tutorial Sheet](#)

## **Chapter 8: Using MS Excel in Mathematics**

[Handout](#)

[Tutorial Sheet](#)