

Trigonometry & Calculus Diagnostic (TCDI) Competencies

AL students who score into MAT 121 on the IADI (60 or above) may take this additional assessment to be placed into MAT

| Category | Competency | Competency Description | Items |
|--------------|--|--|-------|
| Functions | Domain (Inverse of Radicals) | Write the domain of the inverse of a given radical function in interval notation. | 1 |
| Functions | Composition of Functions | Simplify the composition two given functions. | 1 |
| Functions | Library Functions | Recognize library functions. | 1 |
| Functions | Inverse Functions | Find the inverse of a function. | 1 |
| Functions | Piecewise Defined Functions (Graphs) | Graph a piecewise defined function. | 1 |
| Functions | Piecewise Functions | Evaluate a piecewise function at a point. | 1 |
| Functions | Quadratic Functions | Simplify the difference quotient of a quadratic function. | 1 |
| Logarithms | Logarithmic Expressions | Simplify a logarithmic expression. | 1 |
| Functions | Period of a Function | Understand the period of a function. | 1 |
| Trigonometry | Trigonometric Functions (Right Triangle) | Find the value of a trigonometric function in a given right triangle. | 1 |
| Trigonometry | Trigonometric Functions (Unit Circle) | Find the value of a trigonometric function given an ordered pair on the unit circle. | 1 |
| Trigonometry | Trigonometric Expressions (Pythagorean Identity) | Simplify a trigonometric expression using a Pythagorean identity. | 1 |
| Trigonometry | Trigonometric Expressions (Sines and Cosines) | Write a trigonometric expression using only sines and cosines. | 1 |

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| Trigonometry | Trigonometric Equations | Solve a trigonometric equation on $[0, 2\pi]$. | 1 |
| Trigonometry | Trigonometric Functions (Graphs) | Identify the graph of a transformed trigonometric function. | 1 |
| Trigonometry | Trigonometric Formulas | Manipulate trigonometric formulas. | 1 |
| Trigonometry | Trigonometry Application | Use trigonometry in application problem. | 1 |
| Trigonometry | Trigonometric Functions (Inverse) | Understand inverse trigonometric functions. | 1 |
| Trigonometry | Domain and Range (Sine) | Understand domain and range of $f(x) = \sin(x)$. | 1 |
| | | Test Length | 19 |

Notes;

AL student who score less than 29 would stay in MAT 121. AL students who score 30 or above but less than 82 would be placed into MAT 122, 125, or 166. AL students who score 82 or above would be placed into MAT 201.