

TNReady Calculator Policy for Mathematics

The TNReady Calculator Policy is based on two central beliefs:

- 1) Calculators are important tools and, in order to be ready for career and college, students need to understand how to use calculators effectively, and
- 2) In order to demonstrate mastery of the mathematics standards, students must demonstrate many skills without reliance on calculators.

Therefore, at all grade levels and in all courses, TNReady will include both calculator permitted subtests and calculator prohibited subtests.

- Part I will allow calculator use at all grade levels.
- Part II will include a calculator permitted subtest and a calculator prohibited subtest at all grade levels.

The following considerations will shape how items are assigned to each subtest:

- Questions based on standards that require students to perform calculations in order to arrive at an answer will appear on the calculator prohibited subtest of the assessment. For example, 5.NF.A.1 expects students to add/subtract fractions with unlike denominators.
- Other questions may be based on standards where a calculation is a means to demonstrating other understanding. In this case, a student's error could be based on a misconception or a miscalculation, which would color the evidence of what is intended by the assessment. For example, 6.G.A.1 expects students to find area of composite figures and the calculations performed should not be a barrier for students demonstrating understanding of how to determine the area. This would be an example of questions that would appear on the calculator permitted subtest.
- Questions based on standards like 3.G.A.1 which ask students to recognize examples of quadrilaterals may appear on either the calculator permitted or calculator prohibited subtest.

Calculator Specifics

- It is the responsibility of the Test Administrator to ensure the regulations outlined in this policy pertaining to calculator use are followed.
- All memory and user-entered programs and documents must be cleared or removed before and after the test.
- A student may use any permitted calculator at any grade level on a calculator-permitted subtest. For calculator-permitted subtests of TNReady, students may use the online calculator or a handheld calculator provided by the school/district or one owned personally. **Students may use either or both during the test.**
- Students should have access to no more than one handheld calculator device for calculator-permitted subtests of TNReady.
- Students will have access to practice with the same calculator functionalities that will be available on the operational assessment on both the item sampler and the practice tests.

Handheld Calculator Types

Students may use any four-function, scientific, or graphing calculator, which does not include any of the prohibited functionalities. Please note: this is not an exhaustive list of calculator types, and students should be familiar with particular functions at the appropriate grade level.

Examples of Permitted functionalities:

- Square root ($\sqrt{\quad}$)/Square key (x^2 and/or x^y)
- Pi (π)
- Graphing capability
- Data entry
- Matrices
- Regression
- Trigonometric functions (sine, cosine, tangent)
- Logarithm (log and/or ln) and exponential functions (a^x and/or e^x)

Examples of permitted calculators:

- TI-15
- TI-30
- Casio FX260
- Sharp EL344RB
- TI-84 plus family
- TI-Nspire (non-CAS) and TI-Nspire-CX (non-CAS)

Below are calculator functionalities and examples of calculators that are prohibited on TNReady:

Calculator functionalities that are prohibited:

- Any calculator with CAS (computer algebra system) capabilities (including any programs or applications)
- Wireless communication capability
- QWERTY keyboard
- Cell phones, tablets, iPads, etc.

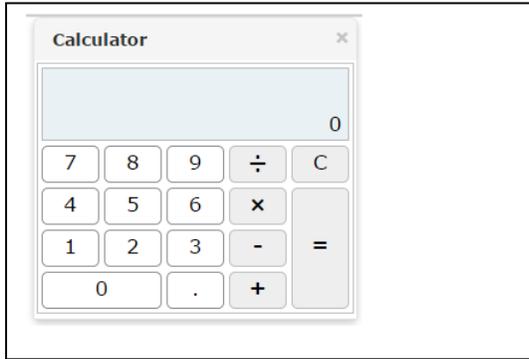
Examples of prohibited calculators:

- TI-89
- TI-Nspire (CAS version)
- HP-40G
- Casio CFX-9970

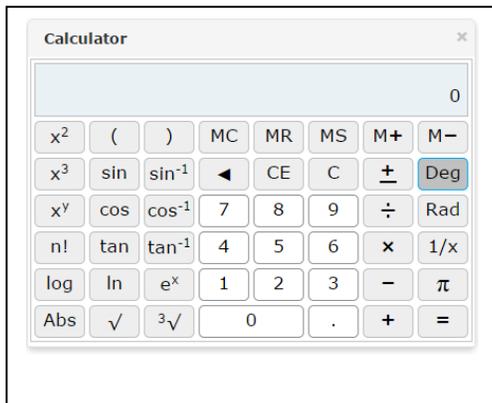
Online Calculator Types

The 3 calculators that will be available are designed after the Windows calculator and the TI calculator series so that students would be very familiar with their functionality. We cannot customize them due to these specifications.

Basic - grades 3-5. Handles basic functions: addition, subtraction, multiplication and division.



Scientific – grades 6-8. Handles basic scientific and trigonometric functions; including sine, cosine, tangent and hyperbolic functions. Features: degree and radian calculations, powers and roots, M+, M-, MR and MC memory operations, parenthesis to specify order of operations, exponential and logarithmic functions and factorials.



Graphing - high school grades. Includes functions of the basic and scientific calculator. Handles calculus, engineering, trigonometric, and financial functions. Features advanced statistics and regression analysis, graphical analysis, and data analysis.

