



TNReady Math Paper/Pencil Form Item Types and Answer Document

The purpose of this document is to provide guidance for districts as they prepare students for the paper and pencil version of the math portion of TNReady. Examples are provided to show how particular item types will appear in the test booklet and what students' answer sheets will look like.

General Guidance:

- Students are allowed to write in their testing booklet. We encourage them to do so.
- Students are allowed to use highlighters in their testing booklet.
- Students are allowed to have scratch paper. Scratch paper may be lined, blank, or graph paper.
- Students are allowed to have rulers. Straight edges in many cases will be useful.
- On the calculator portions of the assessment, please provide calculators familiar to the students.
 - A student may use any permitted calculator at any grade level on a calculator permitted subtest. For more direction, refer to the TNReady calculator policy found ([here](#)).
- Practice grids and graphs are provided in the testing booklet. *Answers placed in the testing booklet do not count.* Test booklets will *not* be scanned or scored. ***Students need to make sure that all final answers are recorded on the answer document, which is also a multiple page booklet.***
- Student response documents will be shipped to the vendor and scanned. The scanned images will be uploaded into the scoring engine which will score all machine scoreable (selected response) items. Human readers will review and score the items that are *not* selected response.

Multiple Choice	
Test Book Example	Answer Document Example
<p>Which statement is correct?</p> <p>Ⓐ $10 = 5 + 5$ means "5 is 10 more than 5."</p> <p>Ⓑ $30 = 6 \times 5$ means "30 is 6 more than 5."</p> <p>Ⓒ $14 = 8 + 6$ means "14 is 8 times as many as 6."</p> <p>Ⓓ $12 = 4 \times 3$ means "12 is 3 times as many as 4."</p>	<p>Ⓐ Ⓑ Ⓒ Ⓓ</p>
Equation Editor	
Test Book Example	Answer Document Example
<p>Evaluate $39 - (11 + 5^3 \div 5)$</p>	<div style="border: 1px solid black; width: 150px; height: 30px; margin: 0 auto;"></div> <p>Write your answer in the box above.</p>
<p>Given:</p> $(x^{\frac{2}{3}} + 4x^{\frac{1}{3}}) - (5x^{\frac{2}{3}} - 7x^{\frac{1}{3}})$ <p>Enter an expression equivalent to the given expression.</p>	<div style="border: 1px solid black; width: 150px; height: 30px; margin: 0 auto;"></div> <p>Write your answer in the box above.</p>

Multiple Select																	
Test Book Example	Answer Document Example																
<p>Which three expressions have a value of 12?</p> <p>A. 2×6</p> <p>B. 5×8</p> <p>C. 7×2</p> <p>D. 4×3</p> <p>E. 1×12</p>	<p>Select three.</p> <p><input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E</p> <p><i>{other possible variations depending upon question}</i></p> <p>Select two.</p> <p><input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E</p> <p>Select all that apply.</p> <p><input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E</p>																
Matching																	
Test Book Example	Answer Document Example																
<p>Draw lines to match each number on the left to an equal expression on the right.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: right;">13,102</td> <td style="width: 70%; text-align: left;">$(2 \times 1,000) + (1 \times 10) + (3 \times 1)$</td> </tr> <tr> <td style="text-align: right;">2,310</td> <td style="text-align: left;">$(2 \times 1,000) + (3 \times 100) + (1 \times 10)$</td> </tr> <tr> <td style="text-align: right;">13,210</td> <td style="text-align: left;">$(1 \times 10,000) + (32 \times 100) + (1 \times 10)$</td> </tr> <tr> <td style="text-align: right;">2,013</td> <td style="text-align: left;">$(13 \times 1,000) + (1 \times 100) + (1 \times 2)$</td> </tr> </table> <p style="text-align: center;">Practice Figure</p>	13,102	$(2 \times 1,000) + (1 \times 10) + (3 \times 1)$	2,310	$(2 \times 1,000) + (3 \times 100) + (1 \times 10)$	13,210	$(1 \times 10,000) + (32 \times 100) + (1 \times 10)$	2,013	$(13 \times 1,000) + (1 \times 100) + (1 \times 2)$	<table style="width: 100%; border: none;"> <tr> <td style="width: 30%; text-align: right;">13,102</td> <td style="width: 70%; text-align: left;">$(2 \times 1,000) + (1 \times 10) + (3 \times 1)$</td> </tr> <tr> <td style="text-align: right;">2,310</td> <td style="text-align: left;">$(2 \times 1,000) + (3 \times 100) + (1 \times 10)$</td> </tr> <tr> <td style="text-align: right;">13,210</td> <td style="text-align: left;">$(1 \times 10,000) + (32 \times 100) + (1 \times 10)$</td> </tr> <tr> <td style="text-align: right;">2,013</td> <td style="text-align: left;">$(13 \times 1,000) + (1 \times 100) + (1 \times 2)$</td> </tr> </table>	13,102	$(2 \times 1,000) + (1 \times 10) + (3 \times 1)$	2,310	$(2 \times 1,000) + (3 \times 100) + (1 \times 10)$	13,210	$(1 \times 10,000) + (32 \times 100) + (1 \times 10)$	2,013	$(13 \times 1,000) + (1 \times 100) + (1 \times 2)$
13,102	$(2 \times 1,000) + (1 \times 10) + (3 \times 1)$																
2,310	$(2 \times 1,000) + (3 \times 100) + (1 \times 10)$																
13,210	$(1 \times 10,000) + (32 \times 100) + (1 \times 10)$																
2,013	$(13 \times 1,000) + (1 \times 100) + (1 \times 2)$																
13,102	$(2 \times 1,000) + (1 \times 10) + (3 \times 1)$																
2,310	$(2 \times 1,000) + (3 \times 100) + (1 \times 10)$																
13,210	$(1 \times 10,000) + (32 \times 100) + (1 \times 10)$																
2,013	$(13 \times 1,000) + (1 \times 100) + (1 \times 2)$																

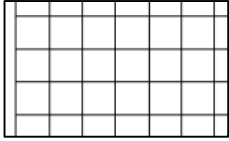
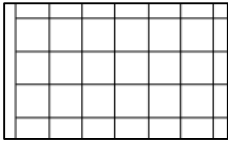
Number Lines

Test Book Example

Answer Document Example

Draw a number line from 0 to 1. Divide it into thirds. Then, place a point at $\frac{2}{3}$.

Students will be provided a grid on which to create their number lines.



Practice Grid

Matching Table

Test Book Example

Answer Document Example

Check the boxes within the table to match the times.

	5:36	5:24	5:30
36 minutes before 6:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24 minutes before 6:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30 minutes before 6:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	5:36	5:24	5:30
36 minutes before 6:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24 minutes before 6:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30 minutes before 6:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Practice Table

Fractions

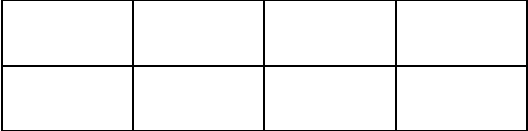
Test Book Example

Answer Document Example

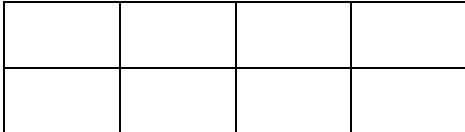
Ellen’s rectangular garden is shown. The garden has eight sections that are all the same size.

Ellen planted tomatoes in $\frac{1}{4}$ of the garden.

Shade the fraction of the garden that has Ellen’s tomatoes.



Practice Fraction Bar



{shade boxes on figure}

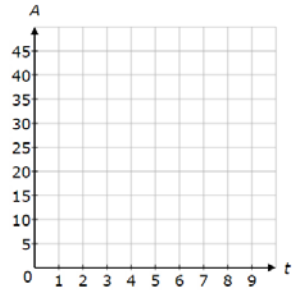
Graphing

Test Book Example

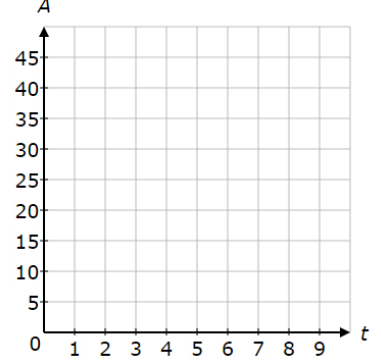
Answer Document Example

Gardenville High School gives 3 awards every year for students that have shown academic improvement. In 2000, the school had already given 18 awards.

Use the grid to graph a line to represent the total number of awards, A , given in t years since 2000.



Practice Grid

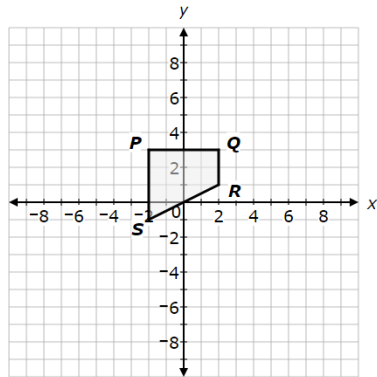


{draw answer on grid}

Test Book Example	Answer Document Example
<p data-bbox="201 261 1136 297">Graph the solution to the inequality $3(x + 2) \geq 5x$ on the number line.</p> <div data-bbox="556 350 1104 410" style="text-align: center;"> </div> <p data-bbox="680 444 978 477" style="text-align: center;">Practice Number Line</p>	<div data-bbox="1493 342 1934 391" style="text-align: center;"> </div> <p data-bbox="1514 475 1913 508" style="text-align: center;"><i>{draw answer on number line}</i></p>
Test Book Example	Answer Document Example
<p data-bbox="201 656 921 691">The function $f(x) = 2x^2 - 6x - 9$ represents a parabola.</p> <p data-bbox="201 714 1428 802">Use the grid to plot points for the x-intercept(s), y-intercept(s), and either the maximum or minimum point, whichever exists, to the nearest tenth.</p> <div data-bbox="642 862 1016 1235" style="text-align: center;"> </div> <p data-bbox="741 1260 917 1292" style="text-align: center;">Practice Grid</p>	<div data-bbox="1535 867 1908 1240" style="text-align: center;"> </div> <p data-bbox="1566 1247 1860 1279" style="text-align: center;"><i>{draw answer on grid}</i></p>

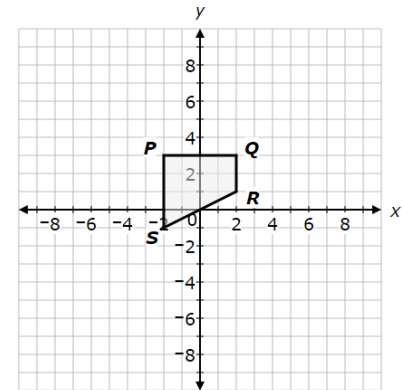
Test Book Example

The transformation $(x', y') = (x + 2, y - 3)$ is applied to figure $PQRS$.
Use the grid to create $P'Q'R'S'$.



Practice Grid

Answer Document Example



{draw answer on grid}

Drag and Drop

Test Book Example

Sort each equation to the correct column showing the number of unique solutions it has.

Two Real Solutions	One Real Solution	No Real Solutions

$-x^2 + 3x - 10 = 0$	$-x^2 + 4x - 8 = 0$	$-x^2 + 5x = 0$
$x^2 - 16 = 0$	$x^2 + 6x + 9 = 0$	$x^2 + 25 = 0$

Practice Chart

Answer Document Example

Two Real Solutions	One Real Solution	No Real Solutions

$-x^2 + 3x - 10 = 0$	$-x^2 + 4x - 8 = 0$	$-x^2 + 5x = 0$
$x^2 - 16 = 0$	$x^2 + 6x + 9 = 0$	$x^2 + 25 = 0$

{write each equation in the appropriate column}

Drop Down Menu

Test Book Example

Answer Document Example

The expression $8750(1.03)^x$ represents the number of people that visit at an exhibit in year x .

Select the correct choice for each box to make a true statement.

The number of people that visit an exhibit $\boxed{\text{W}}$ at a rate of $\boxed{\text{Y}}$ each year.

Box W
A. increases
B. decreases

Box Y
A. 0.03%
B. 1.03%
C. 3%
D. 103%

Box W

- A
- B

Box Y

- A
- B
- C
- D