Tennessee Comprehensive Assessment Program

TCAP

Math
Grade 5 Item Release

TN Department of Education

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Metadata Interpretation Guide - Math

Item Information

Item Code:	TN221545	Grade Level:	5
Standard Code:	5.OA.A.1	Position No:	1
Standard Text:	Use parentheses and/or brackets in numerical expressions and evaluate expressions having these symbols using the conventional order (Order of Operations).		
Reporting Category:	1: Computation with Whole Numbers and Decimals; Evaluating Expressions		
Calculator:	Z		
Correct Answer:	C	DOK Level: 1	Item Type: O

Metadata Definitions

Item Code: Unique letter/number code used to identify the item.		**Grade Level:** Grade level or Course.
Standard Code: Primary educational standard assessed.		**Position No:** Position of the item in the PDF.
Standard Text: Text of the educational standard assessed.		
Reporting Category: Text of the Reporting Category the standard assesses.		
Calculator: Indicates if usage of a calculator is allowed. Y = calculator is allowed, N = calculator is not allowed, Z = calculator may be allowed.		
Correct Answer: Correct answer. This may be blank for constructed response items where students write or type their responses.	**DOK Level:** (if listed): Depth of Knowledge (cognitive complexity) is measured on a three-point scale. 1= Recall or simple reproduction of information; 2= Skills and concepts: comprehension and processing of text; 3= Strategic thinking, prediction, elaboration.	**Item Type:** Indicates administered usage. O = Operational.

Item Information

Item Code:	TN221545	Grade Level:	5
Standard Code:	5.OA.A.1	Position No:	1
Standard Text:	Use parentheses and/or brackets in numerical expressions and evaluate expressions having these symbols using the conventional order (Order of Operations).		
Reporting Category:	1: Computation with Whole Numbers and Decimals; Evaluating Expressions		
Calculator:	Z		
Correct Answer:	C	DOK Level: 1	Item Type: O

What is the value of this expression?

$$(5 + 3) \times (4 - 2)$$

A. 11

B. 15

C. 16

D. 30

Item Information

Item Code:	TN417021	Grade Level:	5
Standard Code:	5.NBT.B.5	Position No:	2
Standard Text:	Fluently multiply multi-digit whole numbers (up to three-digit by four-digit factors) using appropriate strategies and algorithms.		
Reporting Category:	1: Computation with Whole Numbers and Decimals; Evaluating Expressions		
Calculator:	N		
Correct Answer:	9,216 or 9216 DOK Level: 2	Item Type:	O

An art teacher has 192 boxes of crayons. Each box has 48 crayons.

What is the total number of crayons the art teacher has?

Enter your answer in the space provided.

Item Information

Item Code:	TN057580	Grade Level:	5
Standard Code:	5.NBT.B.6	Position No:	3
Standard Text:	Find whole-number quotients and remainders of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.		
Reporting Category:	1: Computation with Whole Numbers and Decimals; Evaluating Expressions		
Calculator:	N		
Correct Answer:	C	DOK Level: 1	Item Type: O

What is $728 \div 52$?

A. 4

B. 11

C. 14

D. 15

Item Information

Item Code:	TN967598	Grade Level:	5
Standard Code:	5.NF.A.1	Position No:	4
Standard Text:	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.		
Reporting Category:	2: Fractions		
Calculator:	Z		
Correct Answer:	A	DOK Level: 2	Item Type: O

The Carson family went fishing. They caught a $2\frac{5}{8}$ pound trout and a $1\frac{1}{2}$ pound bass.

Which calculation shows how many more pounds the trout weighed than the bass?

A. $2\frac{5}{8} - 1\frac{1}{2} = 1\frac{1}{8}$

B. $2\frac{5}{8} - 1\frac{1}{2} = 1\frac{4}{6}$

C. $2\frac{5}{8} + 1\frac{1}{2} = 3\frac{6}{10}$

D. $2\frac{5}{8} + 1\frac{1}{2} = 4\frac{1}{8}$

Item Information

Item Code:	TN857667	Grade Level:	5
Standard Code:	5.NF.A.1	Position No:	5
Standard Text:	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.		
Reporting Category:	2: Fractions		
Calculator:	Z		
Correct Answer:	D	DOK Level: 2	Item Type: O

What is $\frac{3}{5} + \frac{1}{6}$?

A. $\frac{4}{11}$

B. $\frac{2}{15}$

C. $\frac{13}{30}$

D. $\frac{23}{30}$

Item Information

Item Code:	TN717192	Grade Level:	5
Standard Code:	5.NF.B.3	Position No:	6
Standard Text:	Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve contextual problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers by using visual fraction models or equations to represent the problem.		
Reporting Category:	2: Fractions		
Calculator:	Z		
Correct Answer:	D	DOK Level: 1	Item Type: O

A group of 4 students paint a total of 10 posters. Each student does the same amount of work and each poster is the same size.

How many posters did each student paint?

A. $\frac{1}{40}$

B. $\frac{2}{5}$

C. $2\frac{1}{5}$

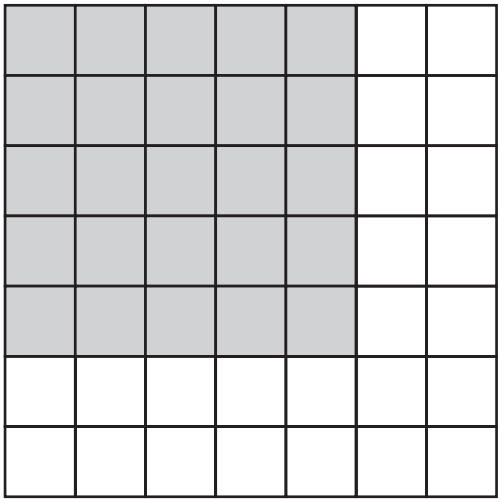
D. $2\frac{1}{2}$

Item Information

Item Code:	TN947350	Grade Level:	5
Standard Code:	5.NF.B.4.b	Position No:	7
Standard Text:	Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles and represent fraction products as rectangular areas.		
Reporting Category:	2: Fractions		
Calculator:	Z		
Correct Answer:	A	DOK Level: 2	Item Type: O

A park is 1 mile by 1 mile square, as shown in the tiling model. The shaded part of the tiling model shows the fractional part of the park that has picnic tables.

Park



Which equation can be used to find the area, in square miles, of the part of the park that has picnic tables?

A. $\frac{5}{7} \times \frac{5}{7} = ?$

B. $\frac{5}{7} + \frac{5}{7} = ?$

C. $\frac{25}{49} \times \frac{25}{49} = ?$

D. $\frac{25}{49} + \frac{25}{49} = ?$

Item Information

Item Code:	TN237396	Grade Level:	5
Standard Code:	5.NF.B.5.b	Position No:	8
Standard Text:	Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explain why multiplying a given number by a fraction less than 1 results in a product less than the given number; and relate the principle of fraction equivalence a/b = (a x n)/(b x n) to the effect of multiplying a/b by 1.		
Reporting Category:	2: Fractions		
Calculator:	N		
Correct Answer:	B	DOK Level: 2	Item Type: O

Greg buys 3 packets of flower seeds. Each packet holds $\frac{1}{4}$ of an ounce of seeds.

The total number of ounces of seeds is given by the expression $3 \times \frac{1}{4}$.

Which statement about the product of $3 \times \frac{1}{4}$ is true?

A. The product is less than $\frac{1}{4}$ because $\frac{1}{4}$ is less than 3.

B. The product is less than 3 because $\frac{1}{4}$ is less than 1.

C. The product is greater than 1 because 3 is greater than 1.

D. The product is greater than 3 because 3 is greater than $\frac{1}{4}$.

Item Information

Item Code:	TN927558	Grade Level:	5
Standard Code:	5.NBT.A.3	Position No:	9
Standard Text:	Read and write decimals to thousandths using standard form, word form, and expanded form (e.g., the expanded form of 347.392 is written as 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000)). Compare two decimals to thousandths based on meanings of the digits in each place and use the symbols >, =, and < to show the relationship.		
Reporting Category:	3: Number Relationships and Patterns		
Calculator:	Z		
Correct Answer:	B,C,E	DOK Level: 2	Item Type: O

Three decimal numbers are listed.

$0.504, 3.057, 28.06$

Which statements about these decimals are true? Select the **three** true statements.

A. The word form of 0.504 is five and four thousandths.

B. The word form of 28.06 is twenty-eight and six hundredths.

C. The expanded form of 0.504 is $\left(5 \times \frac{1}{10}\right) + \left(4 \times \frac{1}{1000}\right)$.

D. The expanded form of 3.057 is $3 \times 1 + \left(5 \times \frac{1}{10}\right) + \left(7 \times \frac{1}{100}\right)$.

E. The expanded form of 28.06 is $2 \times 10 + 8 \times 1 + 6 \times \frac{1}{100}$.

Item Information

Item Code:	TN857546	Grade Level:	5
Standard Code:	5.NBT.A.4	Position No:	10
Standard Text:	Round decimals to the nearest hundredth, tenth, or whole number using understanding of place value.		
Reporting Category:	3: Number Relationships and Patterns		
Calculator:	Z		
Correct Answer:	B	DOK Level: 1	Item Type: O

One meter is equal to about 3.281 feet. What is this number of feet rounded to the nearest tenth?

A. 3.2

B. 3.3

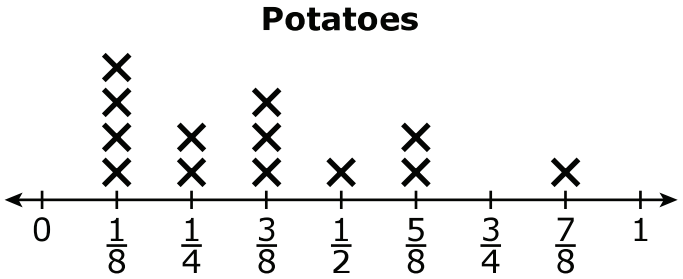
C. 3.28

D. 3.29

Item Information

Item Code:	TN057153	Grade Level:	5
Standard Code:	5.MD.B.2	Position No:	11
Standard Text:	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.		
Reporting Category:	4: Geometric and Measurement Concepts		
Calculator:	Z		
Correct Answer:	B	DOK Level: 2	Item Type: O

Rob grows potatoes in his garden. The weights of the potatoes are shown in this line plot.



Key
Each ✕ represents 1 potato.

Rob bakes the three potatoes that have the **greatest** weights.

What is the total weight, in pounds, of the three potatoes that Rob bakes?

A. 2

B. $2\frac{1}{8}$

C. $2\frac{1}{4}$

D. $2\frac{5}{8}$

Item Information

Item Code:	TN031566	Grade Level:	5
Standard Code:	5.MD.C.3.a	Position No:	12
Standard Text:	Understand that a cube with side length 1 unit, called a ″unit cube,″ is said to have ″one cubic unit″ of volume and can be used to measure volume.		
Reporting Category:	4: Geometric and Measurement Concepts		
Calculator:	Z		
Correct Answer:	A	DOK Level: 1	Item Type: O

Which of these could **best** be measured using unit cubes?

A. the volume of a cereal box

B. the weight of a banana

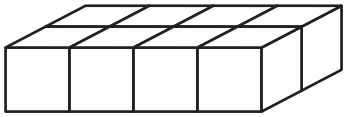
C. the time to cook a carrot

D. the temperature of a cup of coffee

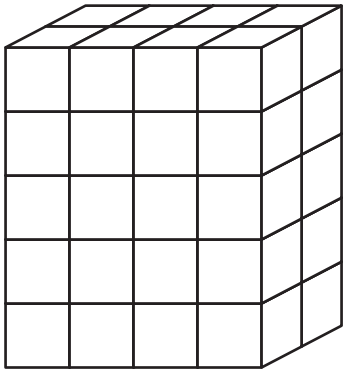
Item Information

Item Code:	TN691088	Grade Level:	5
Standard Code:	5.MD.C.5.a	Position No:	13
Standard Text:	Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent whole-number products of three factors as volumes (e.g., to represent the associative property of multiplication).		
Reporting Category:	4: Geometric and Measurement Concepts		
Calculator:	Z		
Correct Answer:	D	DOK Level: 2	Item Type: O

Amelia makes a figure out of unit cubes. The first layer of cubes she uses is shown.



Then Amelia adds more layers of cubes. The final figure is shown.



What is the volume, in cubic units, of Amelia's final figure?

A. 13

B. 28

C. 32

D. 40

Item Information

Item Code:	TN857686	Grade Level:	5
Standard Code:	5.G.B.3	Position No:	14
Standard Text:	Classify two-dimensional figures in a hierarchy based on properties. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.		
Reporting Category:	4: Geometric and Measurement Concepts		
Calculator:	Z		
Correct Answer:	B,C,D	DOK Level: 1	Item Type: O

Which shapes are parallelograms? Select **all** that apply.

A. pentagon

B. square

C. rhombus

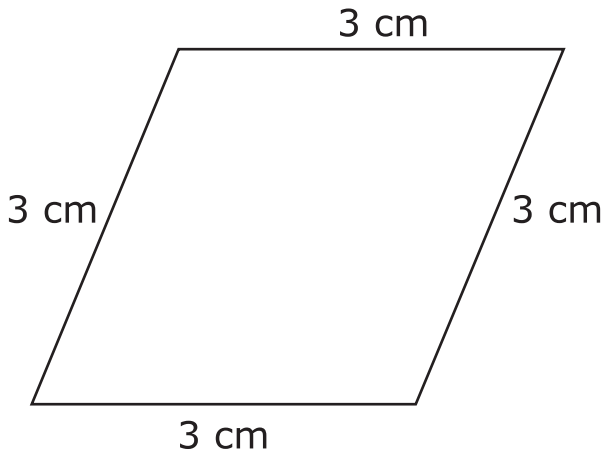
D. rectangle

E. trapezoid

Item Information

Item Code:	TN194426	Grade Level:	5
Standard Code:	5.G.B.3	Position No:	15
Standard Text:	Classify two-dimensional figures in a hierarchy based on properties. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.		
Reporting Category:	4: Geometric and Measurement Concepts		
Calculator:	Z		
Correct Answer:	C,D	DOK Level: 1	Item Type: O

A shape is shown.



Which of these name the shape? Select the **two** correct answers.

A. square

B. rectangle

C. quadrilateral

D. parallelogram

E. equilateral triangle

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