Tennessee Comprehensive Assessment Program

TCAP

Math
Grade 4 Item Release

TN Department of Education

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Item Information			
Item Code:	TN335388		Grade Level: 4
Standard Code:	4.NBT.B.5		Position No: 1
Standard Text:	Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.		
Reporting Category:	1: Computation with Whole Numbers		
Calculator:	Z		
Correct Answer:	B	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:	TN335388	Grade Level:	4
Standard Code:	4.NBT.B.5	Position No:	1
Standard Text:	Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.		
Reporting Category:	1: Computation with Whole Numbers		
Calculator:	Z		
Correct Answer:	B	DOK Level: 1	Item Type: O

Which expression can be represented by an array that has 16 columns and 12 rows?

A. $16 + 12$

B. 16×12

C. $16 - 12$

D. $16 \div 12$

Item Information

Item Code:	TN012466	Grade Level:	4
Standard Code:	4.OA.A.2	Position No:	2
Standard Text:	Multiply or divide to solve contextual problems involving multiplicative comparison, and distinguish multiplicative comparison from additive comparison.		
Reporting Category:	1: Computation with Whole Numbers		
Calculator:	Z		
Correct Answer:	A	DOK Level: 1	Item Type: O

There are 24 books on the bottom shelf of a bookcase. That is 3 times as many books as are on the top shelf of the bookcase.

How many books are on the top shelf?

A. 8

B. 16

C. 21

D. 72

Item Information

Item Code:	TN782455	Grade Level:	4
Standard Code:	4.OA.A.2	Position No:	3
Standard Text:	Multiply or divide to solve contextual problems involving multiplicative comparison, and distinguish multiplicative comparison from additive comparison.		
Reporting Category:	1: Computation with Whole Numbers		
Calculator:	Z		
Correct Answer:	D	DOK Level: 1	Item Type: O

Here are the numbers of green, blue, and red pieces in a game.

- 6 green pieces
- 18 blue pieces
- 24 red pieces

Which sentence about the numbers of pieces in the game is **true**?

A. There are 3 times as many green pieces as blue pieces.

B. There are 12 times as many blue pieces as green pieces.

C. There are 6 times as many red pieces as blue pieces.

D. There are 4 times as many red pieces as green pieces.

Item Information

Item Code:	TN326681	Grade Level:	4
Standard Code:	4.NF.A.1	Position No:	4
Standard Text:	Explain why a fraction a/b is equivalent to a fraction a x n/b x n or a ÷ n/b ÷ n by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.		
Reporting Category:	2: Fractions		
Calculator:	N		
Correct Answer:	C	DOK Level: 1	Item Type: O

Which of these shows fractions that are **both** equivalent to $\frac{8}{12}$?

A. $\frac{2}{6}$ and $\frac{4}{8}$

B. $\frac{2}{4}$ and $\frac{2}{6}$

C. $\frac{2}{3}$ and $\frac{4}{6}$

D. $\frac{2}{3}$ and $\frac{7}{8}$

Item Information

Item Code:	TN032953	Grade Level:	4
Standard Code:	4.NF.B.3.b	Position No:	5
Standard Text:	Decompose a fraction into a sum of fractions with the same denominator in more than one way (e.g. 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8), recording each decomposition by an equation. Justify decompositions by using a visual fraction model.		
Reporting Category:	2: Fractions		
Calculator:	Z		
Correct Answer:	A,B,E	DOK Level: 1	Item Type: O

Which expressions have the same value as $\frac{7}{4}$? Choose the **three** correct answers.

A. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

B. $\frac{2}{4} + \frac{2}{4} + \frac{2}{4} + \frac{1}{4}$

C. $\frac{4}{2} + \frac{3}{2}$

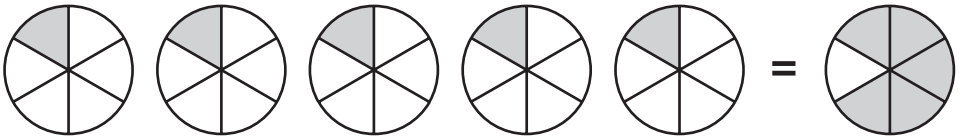
D. $\frac{3}{4} + \frac{3}{4} + \frac{2}{4}$

E. $1 + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

Item Information

Item Code:	TN826697	Grade Level:	4
Standard Code:	4.NF.B.4.a	Position No:	6
Standard Text:	Understand a fraction a/b as a multiple of 1/b.		
Reporting Category:	2: Fractions		
Calculator:	Z		
Correct Answer:	A	DOK Level: 2	Item Type: O

Look at the fraction model.



Which equation could the model represent?

A. $5 \times \frac{1}{6} = \frac{5}{6}$

B. $6 \times \frac{1}{5} = \frac{6}{30}$

C. $5 \times \frac{1}{6} = \frac{6}{5}$

D. $6 \times \frac{1}{5} = \frac{5}{30}$

Item Information

Item Code:	TN932895	Grade Level:	4
Standard Code:	4.NF.C.5	Position No:	7
Standard Text:	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.		
Reporting Category:	2: Fractions		
Calculator:	Z		
Correct Answer:	A	DOK Level: 1	Item Type: O

Which number sentence is **true**?

A. $\frac{2}{10} + \frac{6}{100} = \frac{26}{100}$

B. $\frac{6}{10} + \frac{7}{100} = \frac{76}{100}$

C. $\frac{4}{10} + \frac{5}{100} = \frac{45}{10}$

D. $\frac{5}{10} + \frac{6}{100} = \frac{65}{10}$

Item Information

Item Code:	TN533197	Grade Level:	4
Standard Code:	4.NF.C.6	Position No:	8
Standard Text:	Read and write decimal notation for fractions with denominators 10 or 100. Locate these decimals on a number line.		
Reporting Category:	2: Fractions		
Calculator:	N		
Correct Answer:	B,D	DOK Level: 1	Item Type: O

Which fractions have the same value as 0.6? Choose the **two** correct answers.

A. $\frac{6}{100}$

B. $\frac{6}{10}$

C. $\frac{60}{10}$

D. $\frac{60}{100}$

E. $\frac{600}{100}$

Item Information

Item Code:	TN312432	Grade Level:	4
Standard Code:	4.OA.B.4	Position No:	9
Standard Text:	Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number.Determine whether a given whole number in the range 1–100 is prime or composite.		
Reporting Category:	3: Number Relationships and Patterns		
Calculator:	N		
Correct Answer:	A,B,D	DOK Level: 1	Item Type: O

Which numbers are prime? Choose the **three** correct answers.

A. 7

B. 23

C. 33

D. 47

E. 56

F. 69

Item Information

Item Code:	TN433329	Grade Level:	4
Standard Code:	4.OA.C.5	Position No:	10
Standard Text:	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.		
Reporting Category:	3: Number Relationships and Patterns		
Calculator:	Z		
Correct Answer:	C	DOK Level: 2	Item Type: O

A pattern starts with 8. It follows the rule add 4.

Which statement about the pattern is **true**?

A. The number 4 is a term in the pattern.

B. The number 38 is a term in the pattern.

C. All terms in the pattern are multiples of 4.

D. Some terms in the pattern are odd numbers.

Item Information

Item Code:	TN382398	Grade Level:	4
Standard Code:	4.NBT.A.1	Position No:	11
Standard Text:	Recognize that in a multi-digit whole number (less than or equal to 1,000,000), a digit in one place represents 10 times as much as it represents in the place to its right.		
Reporting Category:	3: Number Relationships and Patterns		
Calculator:	Z		
Correct Answer:	A	DOK Level: 1	Item Type: O

Stacy wrote a number. In the number, the value of the 4 is 10 times the value of the 4 in 1745.

Which number could Stacy have written?

A. 1465

B. 2514

C. 3241

D. 4170

Item Information

Item Code:	TN932416	Grade Level:	4
Standard Code:	4.NBT.A.3	Position No:	12
Standard Text:	Round multi-digit whole numbers to any place (up to and including the hundred-thousand place) using understanding of place value.		
Reporting Category:	3: Number Relationships and Patterns		
Calculator:	Z		
Correct Answer:	C	DOK Level: 1	Item Type: O

Here are two numbers.

3254 4461

Which of these shows the numbers rounded to the nearest 100?

A. 3200 and 4400

B. 3200 and 4500

C. 3300 and 4500

D. 3354 and 4561

Item Information

Item Code:	TN232917	Grade Level:	4
Standard Code:	4.MD.A.2	Position No:	13
Standard Text:	Solve one- or two-step real-world problems involving whole number measurements with all four operations within a single system of measurement including problems involving simple fractions.		
Reporting Category:	4: Geometric and Measurement Concepts		
Calculator:	Z		
Correct Answer:	A	DOK Level: 1	Item Type: O

Max has 144 ounces of dog food. He feeds his dog 6 ounces of food a day.

What is the maximum number of days that Max can feed his dog with the dog food he has?

A. 24

B. 138

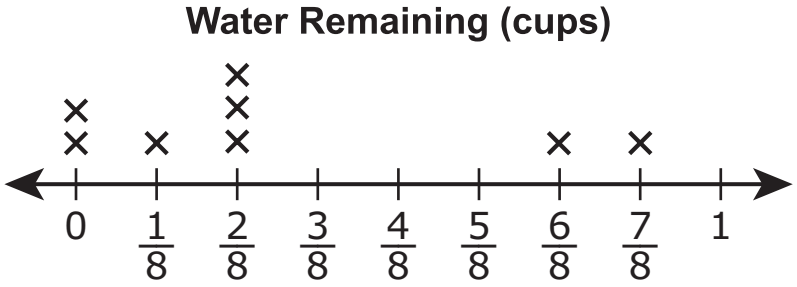
C. 150

D. 864

Item Information

Item Code:	TN735283	Grade Level:	4
Standard Code:	4.MD.B.4	Position No:	14
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:	D	DOK Level: 2	Item Type: O

Stephanie did a science experiment on evaporation. She measured water in 8 glasses. After a few days she measured how much water was left in each glass and plotted the data on a line plot.



How much water, in cups, was left all together?

A. $\frac{6}{8}$

B. 1

C. 2

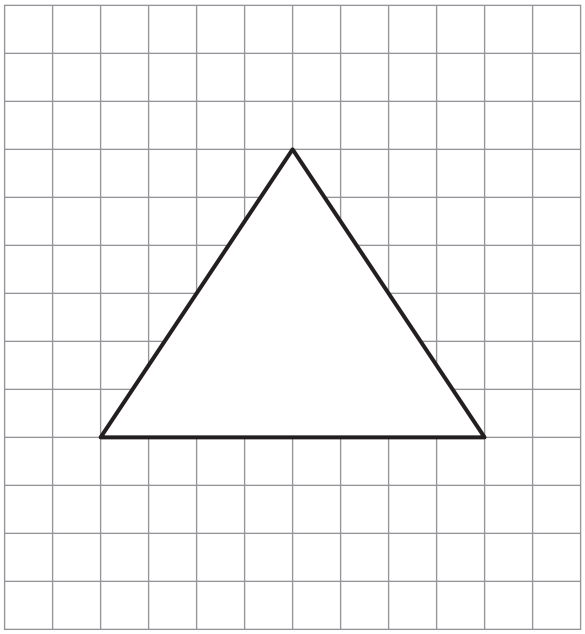
D. $2\frac{1}{2}$

Item Information

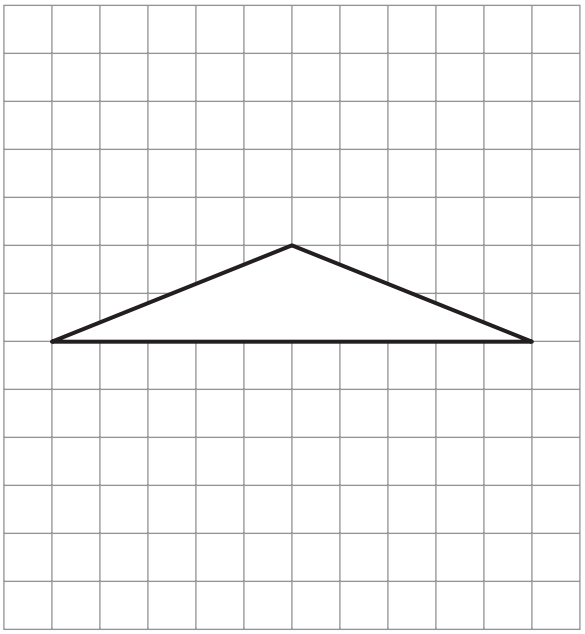
Item Code:	TN932574	Grade Level:	4
Standard Code:	4.G.A.2	Position No:	15
Standard Text:	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size. Recognize right triangles as a category and identify right triangles.		
Reporting Category:	4: Geometric and Measurement Concepts		
Calculator:	Z		
Correct Answer:	B	DOK Level: 1	Item Type: O

Which triangle is a right triangle?

A.

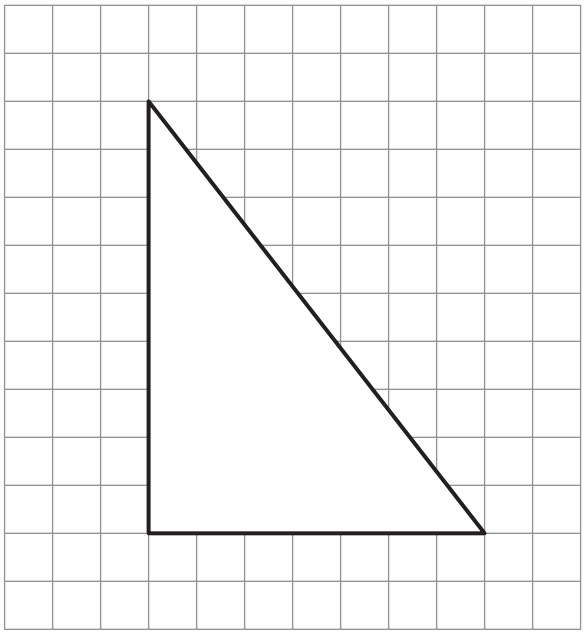


C.

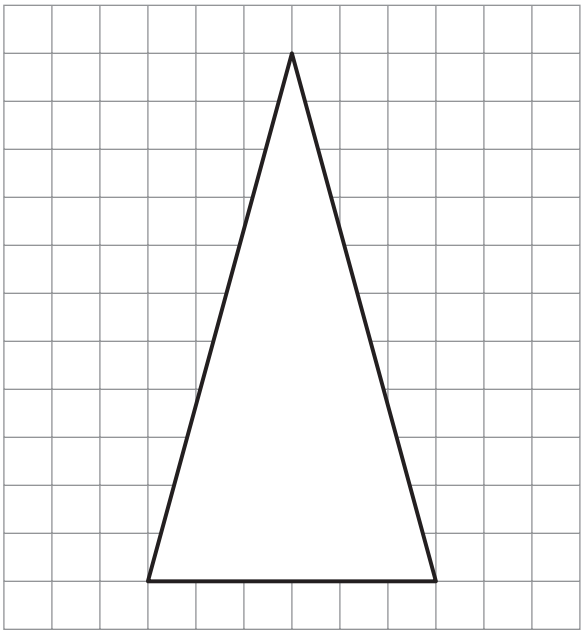


*(**Item 15**, continued from the previous page)*

B.



D.



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