Tennessee TCAP 2019
Grade 7 Math

Exam & Answer Key Materials
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Tennessee Comprehensive Assessment Program

TCAP

Math
Grade 7 Item Release

TN Department of Education

Item Information

Item Code:	TN025978	Grade Level:	7
Standard Code:	7.NS.A.1.b	Position No:	1
Standard Text:	Understand p + q as the number located a distance the absolute value of q from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.		
Reporting Category:	1: Number Relationships		
Calculator:	Z		
Correct Answer:	A,D	DOK Level: 1	Item Type: O

Which expressions have a value of -2?

Select **all** that apply.

A. $-10 + 8$

B. $10 + -8$

C. $-10 + -8$

D. $8 + -10$

E. $10 + 8$

Item Information

Item Code:	TN167139	Grade Level:	7
Standard Code:	7.NS.A.2.a	Position No:	2
Standard Text:	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.		
Reporting Category:	1: Number Relationships		
Calculator:	Z		
Correct Answer:	D	DOK Level: 2	Item Type: O

What is the value of the expression $-2(-3 + -1)$?

A. -8

B. -7

C. 5

D. 8

Item Information

Item Code:	TN847956	Grade Level:	7
Standard Code:	7.NS.A.3	Position No:	3
Standard Text:	Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)		
Reporting Category:	1: Number Relationships		
Calculator:	Z		
Correct Answer:	B	DOK Level: 2	Item Type: O

Each shelf on Sandra's bookcase is $42\frac{1}{2}$ inches long. Each book she will place on a shelf is $\frac{3}{4}$ inch wide.

What is the greatest number of books of this size Sandra can fit on one shelf?

A. 57

B. 56

C. 32

D. 31

Item Information

Item Code:	TN145486	Grade Level:	7
Standard Code:	7.EE.A.1	Position No:	4
Standard Text:	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.		
Reporting Category:	2: Expressions and Equations		
Calculator:	Z		
Correct Answer:	B	DOK Level: 2	Item Type: O

Which expression would be added to $5x + 7$ to make it equivalent to the expression $9(x + 1)$?

A. $4x - 6$

B. $4x + 2$

C. $9x + 1$

D. $14x + 8$

Item Information

Item Code:	TN595528	Grade Level:	7
Standard Code:	7.EE.A.1	Position No:	5
Standard Text:	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.		
Reporting Category:	2: Expressions and Equations		
Calculator:	Z		
Correct Answer:	C	DOK Level: 2	Item Type: O

Which expression is equivalent to $2x - 4y - 10x + 8y$?

A. $-4xy$

B. $8x - 12y$

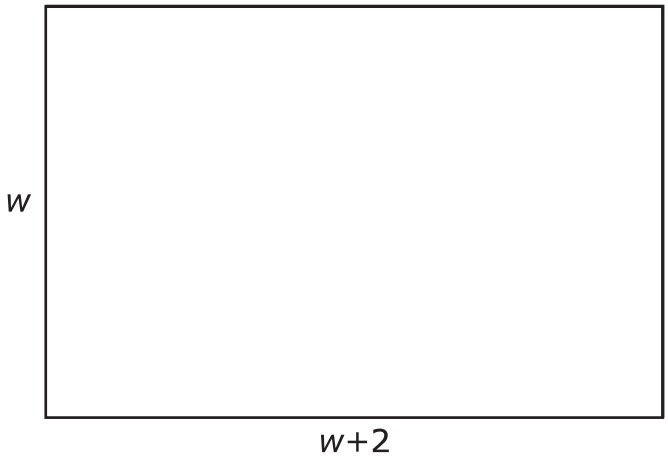
C. $-8x + 4y$

D. $-12x - 12y$

Item Information

Item Code:	TN095489	Grade Level:	7
Standard Code:	7.EE.A.2	Position No:	6
Standard Text:	Understand that rewriting an expression in different forms in a contextual problem can provide multiple ways of interpreting the problem and how the quantities in it are related.		
Reporting Category:	2: Expressions and Equations		
Calculator:	Z		
Correct Answer:	A,C,D	DOK Level: 2	Item Type: O

A rectangle is 2 feet longer than it is wide. This can be shown using w for width.



Which expressions give the perimeter of the rectangle?

Select **all** that apply.

A. $w + w + 2 + w + w + 2$

B. $4w + 8$

C. $4w + 4$

D. $2(w + w + 2)$

E. $4(w + 2)$

Item Information

Item Code:	TN847037	Grade Level:	7
Standard Code:	7.EE.A.2	Position No:	7
Standard Text:	Understand that rewriting an expression in different forms in a contextual problem can provide multiple ways of interpreting the problem and how the quantities in it are related.		
Reporting Category:	2: Expressions and Equations		
Calculator:	Z		
Correct Answer:	D	DOK Level: 2	Item Type: O

The leader of a dance group orders matching skirts and tops for all 18 girls in the group.

- Each skirt costs $14.
- Each top costs t dollars.

The total cost, in dollars, can be found using the expression $18(14 + t)$.

Which is an equivalent expression?

A. $18 + 14t$

B. $18 + 14 + t$

C. $18(14) + t$

D. $18(14) + 18t$

Item Information

Item Code:	TN677053	Grade Level:	7
Standard Code:	7.EE.B.3.a	Position No:	8
Standard Text:	Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate.		
Reporting Category:	2: Expressions and Equations		
Calculator:	Z		
Correct Answer:	A	DOK Level: 2	Item Type: O

Caitlin is making oatmeal cookies.

- She wants to make $1\frac{1}{2}$ batches.
- Each batch of cookies requires $2\frac{1}{2}$ cups of oatmeal.
- She has $3\frac{1}{4}$ cups of oatmeal.

How many more cups of oatmeal does Caitlin need?

A. $\frac{1}{2}$ cup

B. $\frac{3}{4}$ cup

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

D. $3\frac{3}{4}$ cups

Item Information

Item Code:	TN505982	Grade Level:	7
Standard Code:	7.RP.A.1	Position No:	9
Standard Text:	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.		
Reporting Category:	3: Proportional Reasoning		
Calculator:	Z		
Correct Answer:	A,E	DOK Level: 2	Item Type: O

Sam goes on a hike and walks at a pace of $2\frac{1}{2}$ miles per hour.

Which rates are equivalent to $2\frac{1}{2}$ miles per hour? Select **all** that apply.

A. walking $\frac{3}{4}$ of a mile in $\frac{3}{10}$ of an hour

B. walking $1\frac{1}{2}$ miles in $\frac{3}{4}$ of an hour

C. walking $\frac{3}{5}$ of a mile in $1\frac{1}{2}$ hours

D. walking 2 miles in $\frac{5}{6}$ of an hour

E. walking $\frac{5}{6}$ of a mile in $\frac{1}{3}$ of an hour

Item Information

Item Code:	TN296195	Grade Level:	7
Standard Code:	7.RP.A.2.c	Position No:	10
Standard Text:	Represent proportional relationships by equations.		
Reporting Category:	3: Proportional Reasoning		
Calculator:	Z		
Correct Answer:	D	DOK Level: 1	Item Type: O

Which equation represents a proportional relationship?

A. $y = 5x - 2$

B. $y = \frac{3}{4}x - \frac{3}{4}$

C. $y = x^2$

D. $y = 7.8x$

Item Information

Item Code:	TN667604	Grade Level:	7
Standard Code:	7.RP.A.3	Position No:	11
Standard Text:	Use proportional relationships to solve multi-step ratio and percent problems.		
Reporting Category:	3: Proportional Reasoning		
Calculator:	Z		
Correct Answer:	A	DOK Level: 2	Item Type: O

On a school field trip there are 36 boys and a number of girls.

If 40% of the students are girls, how many girls are on the field trip?

A. 24

B. 32

C. 40

D. 60

Item Information

Item Code:	TN941702	Grade Level:	7
Standard Code:	7.G.B.5	Position No:	12
Standard Text:	Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.		
Reporting Category:	4: Geometry and Data		
Calculator:	Z		
Correct Answer:	B	DOK Level: 2	Item Type: O

A right rectangular prism has a height of 8 centimeters and a volume of 250 cubic centimeters. What could be the length and the width?

A. $l = 5\,\text{cm}, w = 6\,\text{cm}$

B. $l = 5\,\text{cm}, w = 6.25\,\text{cm}$

C. $l = 5.25\,\text{cm}, w = 6\,\text{cm}$

D. $l = 5.5\,\text{cm}, w = 6.25\,\text{cm}$

Item Information

Item Code:	TN137710	Grade Level:	7
Standard Code:	7.SP.B.4	Position No:	13
Standard Text:	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.		
Reporting Category:	4: Geometry and Data		
Calculator:	Z		
Correct Answer:	D	DOK Level: 2	Item Type: O

The weights, in pounds, for seven Golden Retrievers and seven German Shepherds are listed below.

- Golden Retrievers: 60, 62, 66, 68, 69, 70, 75
- German Shepherds: 49, 54, 62, 65, 74, 79, 88

Which statement correctly compares the medians and the ranges of the weights of the dogs?

A. Both the median and the range for the Golden Retrievers are less than the median and range for the German Shepherds.

B. Both the median and the range for the Golden Retrievers are greater than the median and range for the German Shepherds.

C. The median for the Golden Retrievers is less than the median for the German Shepherds, but the range for the Golden Retrievers is greater than the range for the German Shepherds.

D. The median for the Golden Retrievers is greater than the median for the German Shepherds, but the range for the Golden Retrievers is less than the range for the German Shepherds.

Item Information

Item Code:	TN887717	Grade Level:	7
Standard Code:	7.SP.C.5	Position No:	14
Standard Text:	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.		
Reporting Category:	4: Geometry and Data		
Calculator:	Z		
Correct Answer:	C	DOK Level: 2	Item Type: O

At a certain airport, the probability that planes take off on time is 0.72.

Which of the following statements is **best** supported by this probability?

A. Planes are less likely to take off on time.

B. Planes are neither likely nor unlikely to take off on time.

C. Planes are more likely to take off on time.

D. All planes take off on time.

Item Information

Item Code:	TN562813	Grade Level:	7
Standard Code:	7.SP.C.7.b	Position No:	15
Standard Text:	Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.		
Reporting Category:	4: Geometry and Data		
Calculator:	Z		
Correct Answer:	A	DOK Level: 2	Item Type: O

This season, a basketball player has made 14 of the 20 free throws he has attempted. Based on his record, what is the probability he will make his next free throw?

A. $\frac{7}{10}$

B. $\frac{14}{21}$

C. $\frac{15}{21}$

D. $\frac{3}{10}$