

# Tennessee Comprehensive Assessment Program

# TCAP

## Math Grade 6 Item Release





# Table of Contents

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**Metadata Interpretation Guide - Math.....4**

**Math Grade 6.....5**

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**Item Information**

Item Code: TN846620	Grade Level: 6
Standard Code: 6.NS.A.1	Position No: 1
Standard Text: Interpret and compute quotients of fractions, and solve contextual problems involving division of fractions by fractions (e.g., using visual fraction models and equations to represent the problem is suggested).	
Reporting Category: 1: Number Relationships	
Calculator: Z	
Correct Answer: C	DOK Level: 1
	Item Type: O

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**Metadata Definitions**

<b>Item Code:</b> Unique letter/number code used to identify the item.	<b>Grade Level:</b> Grade level or Course.
<b>Standard Code:</b> Primary educational standard assessed.	<b>Position No:</b> Position of the item in the PDF.
<b>Standard Text:</b> Text of the educational standard assessed.	
<b>Reporting Category:</b> Text of the Reporting Category the standard assesses.	
<b>Calculator:</b> Indicates if usage of a calculator is allowed. Y = calculator is allowed, N = calculator is not allowed, Z = calculator may be allowed.	
<b>Correct Answer:</b> Correct answer. This may be blank for constructed response items where students write or type their responses.	<b>DOK Level:</b> (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.
	<b>Item Type:</b> Indicates administered usage. O = Operational.

**Item Information**

Item Code: TN846620

Grade Level: 6

Standard Code: 6.NS.A.1

Position No: 1

Standard Text: Interpret and compute quotients of fractions, and solve contextual problems involving division of fractions by fractions (e.g., using visual fraction models and equations to represent the problem is suggested).

Reporting Category: 1: Number Relationships

Calculator: Z

Correct Answer: C

DOK Level: 1

Item Type: O

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Julie orders a sandwich to share at a party. The sandwich is 9 feet long and Julie plans to cut the sandwich into pieces that are  $\frac{3}{4}$  of a foot long.

How many pieces will Julie have to share after she cuts the sandwich?

- A.** 7
- B.** 9
- C.** 12
- D.** 18

**Item Information**

Item Code: TN346665

Grade Level: 6

Standard Code: 6.NS.B.2

Position No: 2

Standard Text: Fluently divide multi-digit numbers using a standard algorithm.

Reporting Category: 1: Number Relationships

Calculator: N

Correct Answer: B

DOK Level: 1

Item Type: O

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What is the quotient of  $4,510 \div 22$ ?

- A.** 25
- B.** 205
- C.** 2,005
- D.** 2,050

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**Item Information**

Item Code: TN146690

Grade Level: 6

Standard Code: 6.NS.B.3

Position No: 3

Standard Text: Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm for each operation.

Reporting Category: 1: Number Relationships

Calculator: N

Correct Answer: B

DOK Level: 1

Item Type: O

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Subtract 8.7 from 92.704. Which number represents the difference?

- A.** 84.000
- B.** 84.004
- C.** 84.400
- D.** 84.697

**Item Information**

Item Code: TN358333

Grade Level: 6

Standard Code: 6.NS.C.6.b

Position No: 4

Standard Text: Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

Reporting Category: 1: Number Relationships

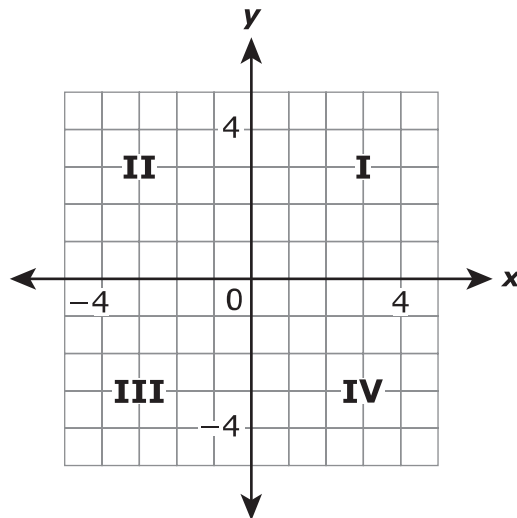
Calculator: Z

Correct Answer: D

DOK Level: 2

Item Type: O

A point on the coordinate plane is reflected across the  $y$ -axis to  $(5, -3)$ . What are the coordinates of the point before the reflection?



- A.**  $(-3, 5)$
- B.**  $(5, 3)$
- C.**  $(-5, 3)$
- D.**  $(-5, -3)$



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**Item Information**

Item Code: TN146183

Grade Level: 6

Standard Code: 6.EE.A.2.c

Position No: 5

Standard Text: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

Reporting Category: 3: Expressions and Equations

Calculator: Z

Correct Answer: C

DOK Level: 2

Item Type: O

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What is the value of the expression  $2 + x^2 \cdot 5$  when  $x = 3$ ?

- A.** 125
- B.** 55
- C.** 47
- D.** 32

**Item Information**

Item Code: TN846208

Grade Level: 6

Standard Code: 6.EE.A.4

Position No: 6

Standard Text: Identify when expressions are equivalent (i.e., when the expressions name the same number regardless of which value is substituted into them).

Reporting Category: 3: Expressions and Equations

Calculator: Z

Correct Answer: C,E

DOK Level: 2

Item Type: O

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Which expression is equivalent to  $3y + 6$ ? Select **two** correct answers.

- A.**  $y^2 + 2y + 6$
- B.**  $3(y + 6)$
- C.**  $5y + 1 - 2y + 5$
- D.**  $(y + 3) + 6$
- E.**  $3(y + 2)$

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**Item Information**

Item Code: TN258359

Grade Level: 6

Standard Code: 6.EE.B.5

Position No: 7

Standard Text: Understand solving an equation or inequality is carried out by determining if any of the values from a given set make the equation or inequality true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Reporting Category: 3: Expressions and Equations

Calculator: Z

Correct Answer: C,D,E

DOK Level: 2

Item Type: O

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Select **all** of the values of  $x$  that make the inequality  $4x \geq 8$  true.

- A.** 0
- B.** 1
- C.** 2
- D.** 3
- E.** 4

**Item Information**

Item Code: TN182551

Grade Level: 6

Standard Code: 6.EE.B.6

Position No: 8

Standard Text: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

Reporting Category: 3: Expressions and Equations

Calculator: Z

Correct Answer: A

DOK Level: 1

Item Type: O

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Maria buys  $x$  books. Each book costs \$5.

Which expression represents the amount of money Maria spends to buy  $x$  books?

- A.**  $5x$
- B.**  $5 + x$
- C.**  $\frac{5}{x}$
- D.**  $\frac{x}{5}$

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**Item Information**

Item Code: TN358203

Grade Level: 6

Standard Code: 6.R.P.A.1

Position No: 9

Standard Text: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

Reporting Category: 2: Ratios and Rates

Calculator: Z

Correct Answer: C

DOK Level: 1

Item Type: O

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There are 15 boys and 10 girls in Ms. Rogers' class. What is the ratio of boys to girls?

- A.** 2:3
- B.** 2:5
- C.** 3:2
- D.** 3:5

**Item Information**

Item Code: TN082639

Grade Level: 6

Standard Code: 6.RP.A.2

Position No: 10

Standard Text: Understand the concept of a unit rate  $a/b$  associated with a ratio  $a:b$  with  $b$  not equal to 0. Use rate language in the context of a ratio relationship.

Reporting Category: 2: Ratios and Rates

Calculator: Z

Correct Answer: B

DOK Level: 2

Item Type: O

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A truck travels 90 miles on 6 gallons of gas.

What is the rate the truck travels in miles per gallon?

- A.** 6
- B.** 15
- C.** 90
- D.** 540

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**Item Information**

Item Code: TN058151

Grade Level: 6

Standard Code: 6.RP.A.3.c

Position No: 11

Standard Text: Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

Reporting Category: 2: Ratios and Rates

Calculator: Z

Correct Answer: B

DOK Level: 2

Item Type: O

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What percent of 400 is 75?

- A.** 5.33%
- B.** 18.75%
- C.** 25%
- D.** 53%

**Item Information**

Item Code: TN346508

Grade Level: 6

Standard Code: 6.G.A.4

Position No: 12

Standard Text: Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Reporting Category: 4: Geometry and Data

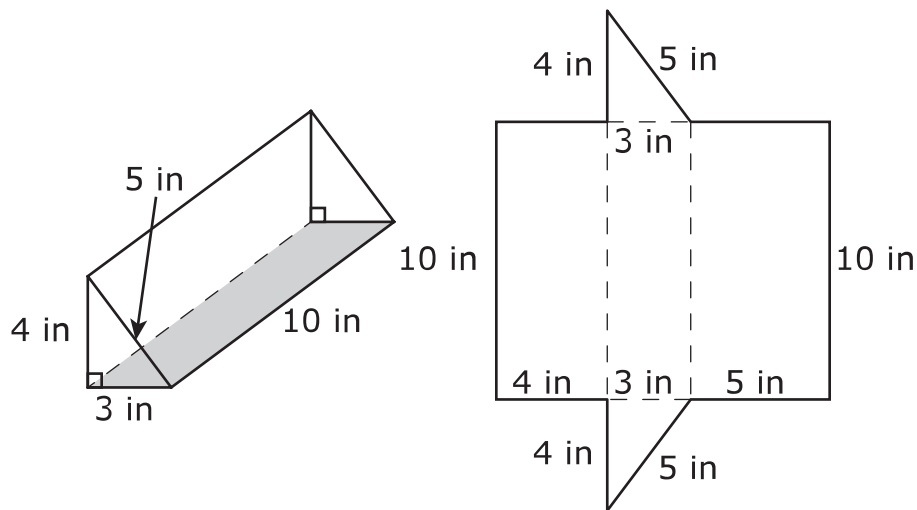
Calculator: Z

Correct Answer: D

DOK Level: 2

Item Type: O

A right triangular prism and its net are shown.



What is the surface area, in square inches, of the prism?

- A.** 102
- B.** 120
- C.** 126
- D.** 132



**Item Information**

Item Code: TN382576

Grade Level: 6

Standard Code: 6.SP.B.5.b

Position No: 13

Standard Text: Describe the nature of the attribute under investigation, including how it was measured and its units of measurement.

Reporting Category: 4: Geometry and Data

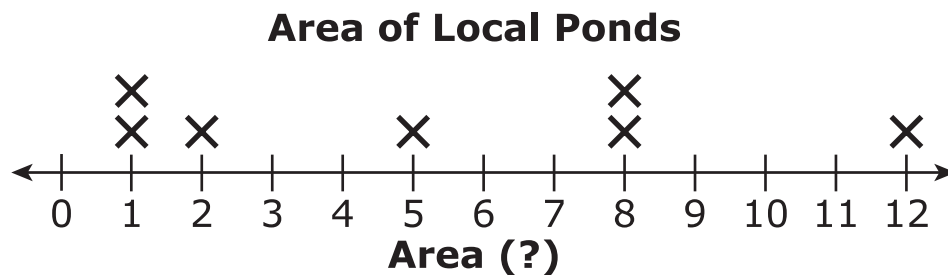
Calculator: Z

Correct Answer: A

DOK Level: 1

Item Type: O

A scientist is doing a study of several local ponds. The line plot shows part of the scientist's findings.



Which unit would be **most** appropriate for the horizontal axis of the line plot?

- A.** square feet
- B.** miles
- C.** inches
- D.** liters

**Item Information**

Item Code: TN658524

Grade Level: 6

Standard Code: 6.SP.B.5.c

Position No: 14

Standard Text: Give quantitative measures of center (median and/or mean) and variability (range) as well as describing any overall pattern with reference to the context in which the data were gathered.

Reporting Category: 4: Geometry and Data

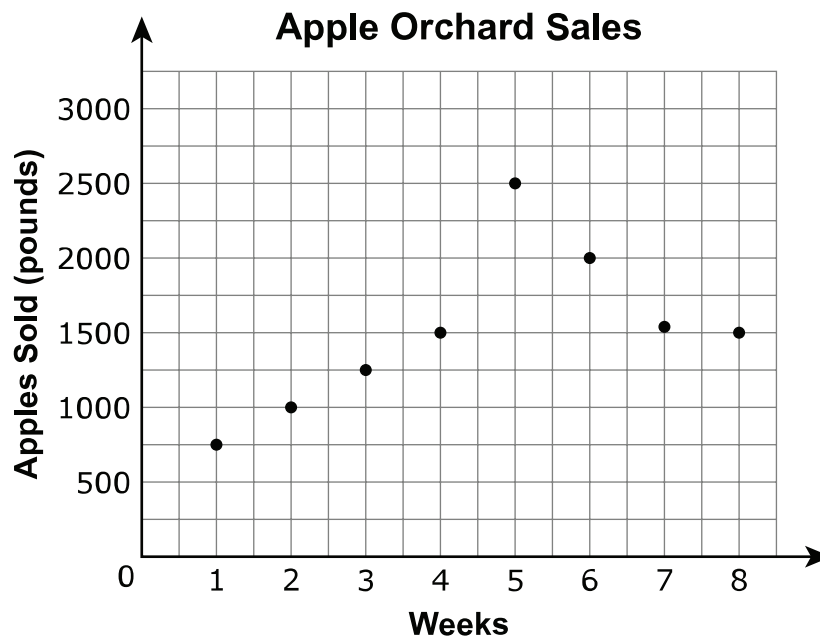
Calculator: Z

Correct Answer: C,E

DOK Level: 2

Item Type: O

John graphed the weight of apples sold at his apple orchard each week for one season.



Select **all** correct statements about the apple orchard sales.

- A.** The sales peak at week 8.
- B.** The data are evenly spread over the weeks.
- C.** The sales peak at week 5.
- D.** The data are symmetrical.
- E.** Less than 50 percent of the data occur after week 5.

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