# Tennessee Comprehensive Assessment Program

# TCAP

## Math

## Grade 7 Test Practice


TN Department of Education

# Metadata—Math

## Items

| Page Number | Grade | Item Type | Key | EOL | TN Standards | Calculator |
|---|---|---|---|---|---|---|
| 1 | 7 | MC | C | 2 | 7.EE.A.2 | N |
| 2 | 7 | MC | B | 3 | 7.SP.C.5 | N |
| 3 | 7 | MC | C | 3 | 7.SP.D.8.b | N |
| 4 | 7 | MC | A | 3 | 7.RP.A.2.a | N |
| 5 | 7 | MC | D | 3 | 7.SP.B.3 | N |
| 6 | 7 | MC | B | 3 | 7.G.B.4 | N |
| 7 | 7 | MS | D,E | 4 | 7.EE.B.3.b | N |
| 8 | 7 | MC | C | 3 | 7.NS.A.1.a | N |
| 9 | 7 | MC | B | 3 | 7.RP.A.3 | N |
| 10 | 7 | MC | A | 3 | 7.NS.A.1.c | N |
| 11 | 7 | MS | A,B,C | 3 | 7.RP.A.2.c | N |
| 12 | 7 | MC | C | 3 | 7.NS.A.2.d | N |
| 13 | 7 | MC | C | 3 | 7.NS.A.3 | N |
| 14 | 7 | MC | D | 3 | 7.SP.B.4 | Y |
| 15 | 7 | MS | A,E | 2 | 7.EE.A.1 | Y |
| 16 | 7 | MC | C | 3 | 7.EE.B.3.a | Y |
| 17 | 7 | MC | C | 3 | 7.RP.A.2.d | Y |
| 18 | 7 | FIB | 325 | 3 | 7.EE.B.4.b | Y |
| 19 | 7 | MC | C | 2 | 7.NS.A.1.a | Y |
| 20 | 7 | MC | A | 3 | 7.G.B.3 | Y |
| 21 | 7 | MC | C | 3 | 7.SP.A.2 | Y |
| 22 | 7 | MC | B | 4 | 7.NS.A.2.a | Y |
| 23 | 7 | MC | B | 2 | 7.EE.B.4.a | Y |
| 24 | 7 | MC | D | 3 | 7.G.A.1 | Y |
| 25 | 7 | MC | B | 3 | 7.SP.C.6.a | Y |
| 26 | 7 | MC | D | 3 | 7.NS.A.3 | Y |
| 27 | 7 | MC | A | 2 | 7.EE.A.1 | Y |
| 28 | 7 | MC | B | 3 | 7.SP.B.3 | Y |
| 29 | 7 | MC | C | 3 | 7.G.B.3 | Y |
| 30 | 7 | MC | B | 3 | 7.RP.A.1 | Y |
| 31 | 7 | MC | B | 2 | 7.EE.B.4.b | Y |
| 32 | 7 | MC | C | 4 | 7.EE.B.4.a | Y |
| 33 | 7 | MC | C | 3 | 7.SP.D.8.a | Y |
| 34 | 7 | MC | A | 2 | 7.RP.A.2.b | Y |
| 35 | 7 | MC | B | 3 | 7.EE.A.2 | Y |
| 36 | 7 | MC | D | 3 | 7.G.A.2 | Y |
| 37 | 7 | MS | A,D | 3 | 7.SP.C.7.b | Y |

| | | | | | | |
|---|---|---|---|---|---|---|
| 38 | 7 | MC | B | 3 | 7.RP.A.3 | Y |
| 39 | 7 | MC | D | 2 | 7.EE.B.4.b | Y |
| 40 | 7 | MC | A | 2 | 7.EE.A.1 | Y |

## Metadata Definitions

| | |
|---|---|
| **Grade** | Grade level or Course. |
| **Item Type** | Indicates the type of item.<br>MC= Multiple Choice; MS= Multiple Select;<br>FIB = Fill-in-the-blank |
| **Key** | Correct answer. |
| **EOL** | Evidence of Learning (EOL) statements provide indication of how students are tracking toward grade-level conceptual understanding of the Tennessee Mathematic Standards.<br>Performance at Level 2 demonstrates that the student is **approaching** grade-level understanding and has a **partial** ability to apply the grade-/course-level knowledge and skills defined by the Tennessee Academic Standards<br>Performance at Level 3 demonstrates that the student has a **comprehensive** understanding and **thorough** ability to apply the grade-/course-level knowledge and skills defined by the Tennessee Academic Standards<br>Performance at Level 4 demonstrated that the student has an **extensive** understanding and **expert** ability to apply the grade-/course-level knowledge and skills defined by the Tennessee Academic Standards |
| **TN Standards** | Primary educational standard assessed. |
| **Calculator** | Y for items that permit calculator use. |

**00.** The perimeter of a rectangle, in inches, is $h + h + w + w$.

Which expression represents the same perimeter?

**A.** $2hw$

**B.** $2 + hw$

**C.** $2(h + w)$

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

**00.** The probability of an event is 0.0937.

Which term best describes the probability of this event?

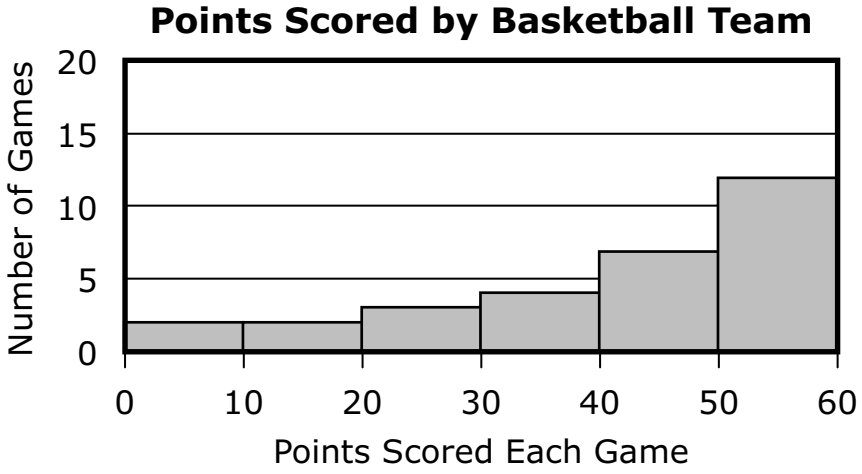
**A.** impossible

**B.** unlikely

**C.** likely

**D.** certain

**00.** Zachary created this histogram representing the number of points scored by his team in each of their 30 basketball games.




Which measure of center and measure of variability would **best** represent the data?

**A.** mean and interquartile range

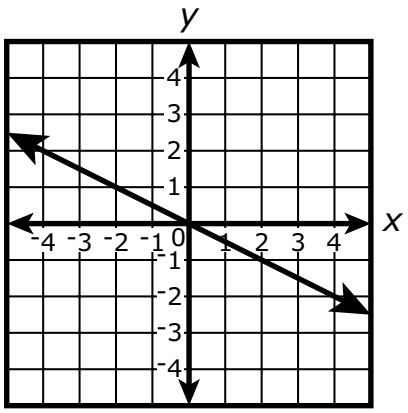
**B.** mean and range

**C.** median and interquartile range

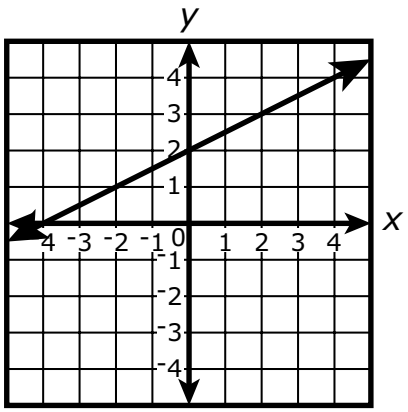
**D.** median and range

**00.** Which representation shows a proportional relationship?

**A.**




**B.**



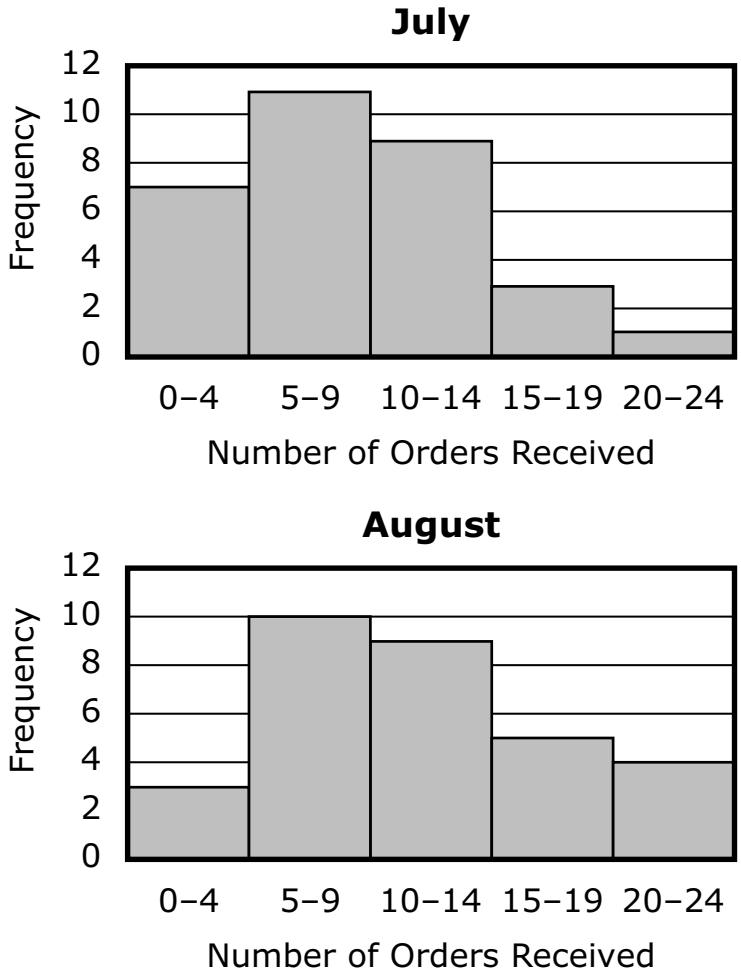

**C.**

| *x* | *y* |
|---|---|
| 1 | −7 |
| 2 | −11 |
| 3 | −15 |
| 4 | −10 |

**D.**

| *x* | *y* |
|---|---|
| 1 | 1 |
| 2 | 3 |
| 3 | 5 |
| 4 | 7 |

**00.** Kyrie sells jewelry online. The histograms shown display the number of orders Kyrie received each day in July and August. July and August each have 31 days.




Based on the histograms, what is the **greatest** possible difference in the median orders?

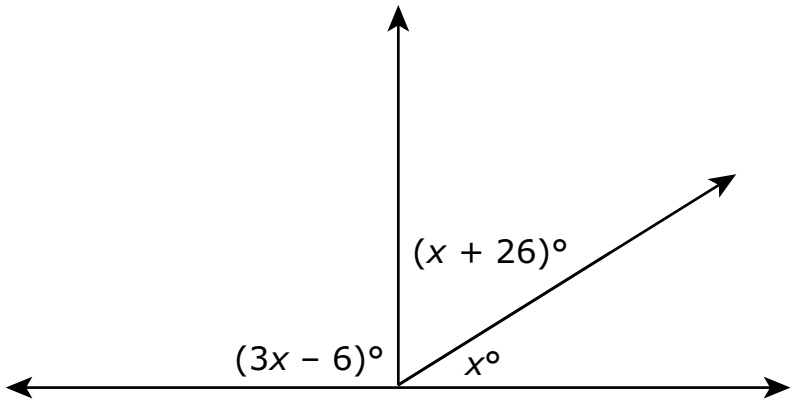
**A.** 4

**B.** 5

**C.** 8

**D.** 9

**00.** A diagram with angle measures is shown.




What is the value of $x$?

**A.** 14

**B.** 32

**C.** 40

**D.** 77

**00.** The cost of a car repair is $701.48. Two coupons can be used. The first coupon applied is $100 off. The second coupon applied is $\frac{1}{10}$ off the reduced price.

Which two expressions most closely represent the final cost of the car repair?

Select the **two** correct answers.

**A.** $700 - 700\left(\frac{1}{10}\right) - 100$

**B.** $700(1 - \frac{1}{10}) - 100$

**C.** $(700 - 100)\left(\frac{1}{10}\right)$

**D.** $(700 - 100)\left(\frac{9}{10}\right)$

**E.** $(700 - 100) - (700 - 100)\left(\frac{1}{10}\right)$

**00.** The overnight low temperature in a town was −5°F. The temperature rose 17°F to reach the high temperature.

What was the high temperature?

**A.** −22°F

**B.** −12°F

**C.** 12°F

**D.** 22°F

**00.** The table shows the cost for different fruits at a grocery store.

| Fruit | Cost (dollars) |
|---|---|
| Oranges | $0.75 each |
| Strawberries | $4 per pound |
| Watermelons | $4 each |

Darius buys 8 oranges, $\frac{1}{2}$ pound of strawberries, and 1 watermelon. He has a coupon for 10% off the total cost of the fruit. What is the total cost of the fruit after he uses the coupon?

**A.** $8.75

**B.** $10.80

**C.** $11.90

**D.** $12.00

**00.** Which expression makes the statement true?

$$-3.7 + 2.6 + \square = 0$$

**A.** $-5.4 + 6.5$

**B.** $5.4 - 6.5$

**C.** $-3.8 - 2.5$

**D.** $3.8 + 2.5$

**00.** Which equations represent a proportional relationship between $x$ and $y$?

Select the **three** correct answers.

**A.** $y = x$

**B.** $y = \frac{x}{3}$

**C.** $y = 2x + x$

**D.** $y = 3x^2$

**E.** $y = 4x - 1$

**00.** What is the decimal equivalent of $\frac{4}{15}$?

**A.** 0.26

**B.** 0.266

**C.** $0.2\overline{6}$

**D.** $0.\overline{26}$

**00.** Reggie sent 56 invitations for an event.

- He sent $\frac{3}{8}$ of all the invitations on Monday.
- He sent $\frac{1}{2}$ of all the invitations on Tuesday.
- He sent the rest of the invitations on Friday.

What is the total number of invitations Reggie sent on Tuesday and Friday?

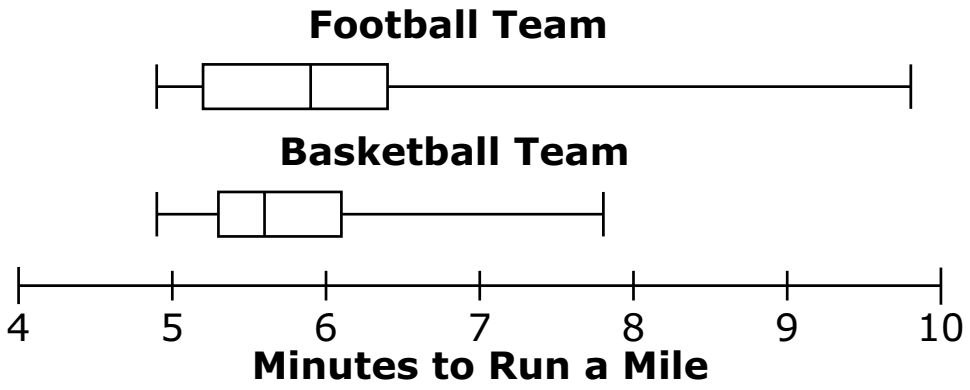
**A.** 7

**B.** 28

**C.** 35

**D.** 49

**00.** Members of the boys' basketball team and the boys' football team each run a mile and record their times.




What conclusion can you make based on the boxplots of their times?

**A.** All members of the basketball team are faster than, or at least as fast as, the members of the football team.

**B.** The basketball team and the football team run a mile in the same amount of time.

**C.** Overall, the football team runs the mile faster than the basketball team.

**D.** Overall, the basketball team runs the mile faster than the football team.

**00.** Which expressions are equivalent to $-0.2x$?

Select the **two** correct answers.

**A.** $0.8x - x$

**B.** $-1 + 0.8x$

**C.** $-0.5 + 0.3x$

**D.** $0.5x + (-0.3)x$

**E.** $-0.1x + (-0.1)x$

**00.** A student is playing an online review game. The student has completed $\frac{2}{3}$ of the 42 review questions. The student has correctly answered $\frac{3}{4}$ of the completed review questions.

How many of the completed review questions has the student answered correctly?

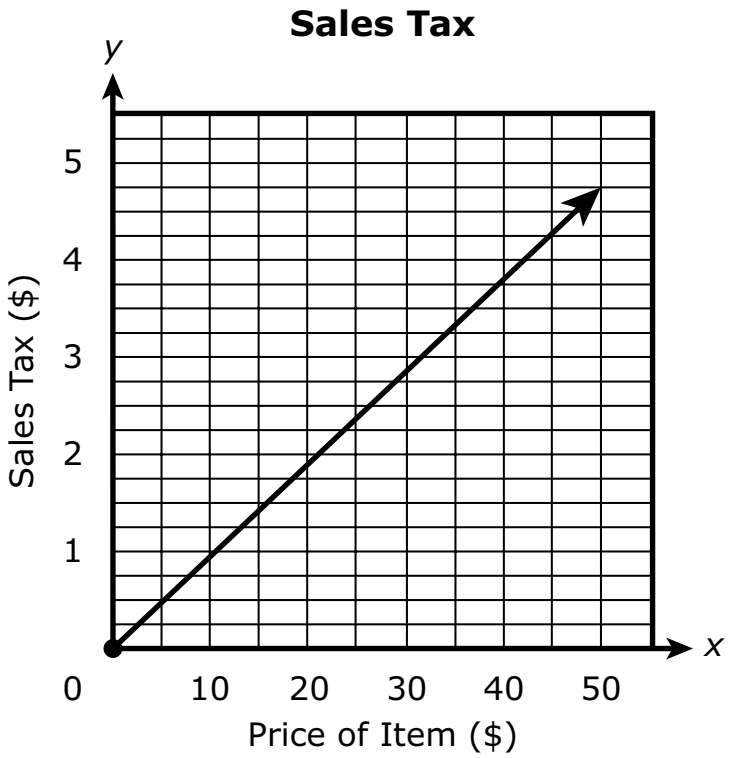
**A.** 7

**B.** 14

**C.** 21

**D.** 28

**00.** The graph shows the relationship between the price of an item in dollars and the amount of sales tax.




Based on the graph, what does the point (30, 2.85) mean in this context?

**A.** The unit rate of the relationship is 30%.

**B.** The unit rate of the relationship is 2.85%.

**C.** An item with a price of $30 has a sales tax of $2.85.

**D.** An item with a price of $2.85 has a sales tax of $30.

**00.** A company sells shirts for $20. The company has $1,500 in expenses for the shirts. Its goal is to make a profit of at least $5,000. What is the least number of shirts the company needs to sell to meet its goal?

Enter your answer in the space provided.

**00.** Which situation is correctly described by the equation $2 + (-2) = 0$?

**A.** Two people are on a bus. Two more people get on the bus. What is the total number of people on the bus?

**B.** Two people are seated in each of two seats on a bus. What is the total number of people seated on the bus?

**C.** Two people are waiting for a bus at a bus stop. If the two people leave the bus stop, how many people are left waiting for the bus?

**D.** Two people exit a bus at the first stop. At the second stop, two more people exit the bus. How many people exited the bus after two stops?

**00.** The front of a circular sign has a diameter of 2.5 feet.

Which measurement is closest to the area, in square feet, of the front of the sign?

**A.** 4.90

**B.** 7.85

**C.** 9.81

**D.** 19.63

**00.** All the students in three randomly selected classes were surveyed whether they eat 5 or more servings of fruits and vegetables each day. There are 25 students in each class. There are a total of 1,000 students in the school. The results of the survey are shown.

- There were 5 students in Class 1 that answered they eat 5 or more servings.
- There were 6 students in Class 2 that answered they eat 5 or more servings.
- There were 3 students in Class 3 that answered they eat 5 or more servings.

Based on the results of the survey, in which range would the expected percentage be for all 1,000 students who eat 5 or more servings of fruits and vegetables each day?

**A.** between 1% and 4%

**B.** between 7% and 12%

**C.** between 15% and 20%

**D.** between 21% and 28%

**00.** When a refrigerator was first installed, the interior temperature of the appliance was 72°F. In order for food to be safely stored, the interior temperature of the refrigerator should be 40°F.

Paul determined that his new refrigerator cooled $10\frac{2}{3}$°F per hour for 3 hours to reach 40°F. The equation $72 + \left(-10\frac{2}{3}\right)(3) = 40$ models this situation. What is an interpretation of the product $\left(-10\frac{2}{3}\right)(3)$?

**A.** the rate of change of the cooling process

**B.** the number of degrees the temperature changed

**C.** the number of hours it took the temperature to cool

**D.** the temperature at which food can be safely stored

**00.** Terry sews jackets that require 2.25 yards of fabric each. Terry starts with 44.5 yards of fabric.

Which equation represents the maximum number of jackets, $j$, that Terry can make while still having 31 yards of fabric remaining?

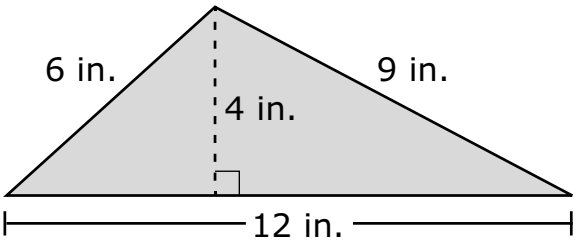
**A.** $2.25j - 44.5 = 31$

**B.** $-2.25j + 44.5 = 31$

**C.** $-2.25j + 31 = 44.5$

**D.** $31j + 2.25 = 44.5$

**00.** A triangle is shown. The triangle will be enlarged by a scale factor of $\frac{5}{4}$.




What is the area, in square inches, of the enlarged triangle?

**A.** 15.36

**B.** 24

**C.** 27

**D.** 37.5

**00.** The table shows the warm-up activities for the first 50 days of a math class.

**Math Warm-Up Activities**

| Activity | Number of Days |
|---|---|
| Fluency | 17 |
| Word problem | 13 |
| Puzzle | 20 |

What is the experimental probability that the next warm-up activity will be a puzzle?

**A.** $\frac{1}{3}$

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

**C.** $\frac{3}{5}$

**D.** $\frac{2}{3}$

**00.** A pitcher contained $\frac{3}{5}$ gallon of lemonade. Jessica drank $\frac{1}{4}$ of the lemonade in the pitcher. Which fraction represents how many gallons of lemonade remained in the pitcher?

**A.** $\frac{3}{20}$

**B.** $\frac{5}{20}$

**C.** $\frac{7}{20}$

**D.** $\frac{9}{20}$

**00.** Which expression is equivalent to $\frac{3}{5}x - 2 - \frac{4}{3}x + 8$?

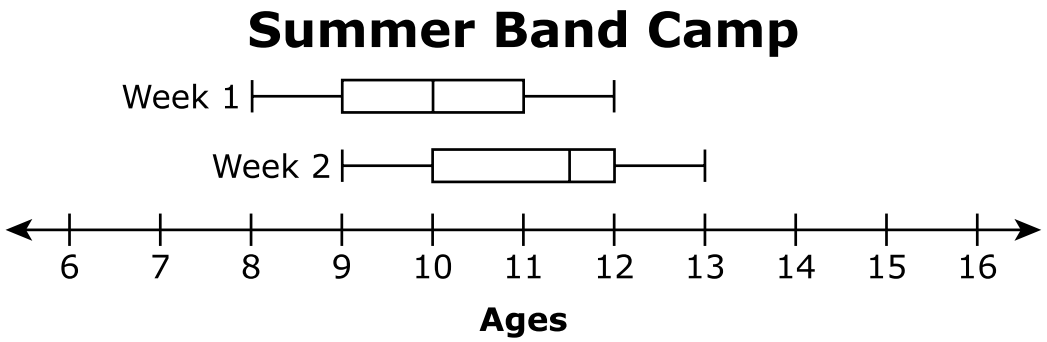
**A.** $-\frac{11}{15}x + 6$

**B.** $\frac{11}{15}x + 6$

**C.** $-\frac{11}{15}x - 10$

**D.** $\frac{11}{15}x - 10$

**00.** The box plots show the ages of the people who attended summer band camp during two different weeks.




Based on the box plots, which statement is a valid conclusion?

**A.** The median age in week 1 was greater than the median age in week 2.

**B.** The median age in week 2 was greater than the median age in week 1.

**C.** The range of ages in week 1 was greater than the range of ages in week 2.

**D.** The range of ages in week 2 was greater than the range of ages in week 1.

**00.** Julian has a rotating sprinkler that sprays water in a circular area of grass in his yard. The radius of the circular area of grass is 12 feet. Which value is **closest** to the area the sprinkler sprays with water, in square feet?

**A.** 38

**B.** 75

**C.** 452

**D.** 1,809

**00.** A rug with an area of $7\frac{4}{5}$ square yards costs $169.50.

Which amount represents the cost, per square yard, of the rug?

**A.** $21.25

**B.** $21.73

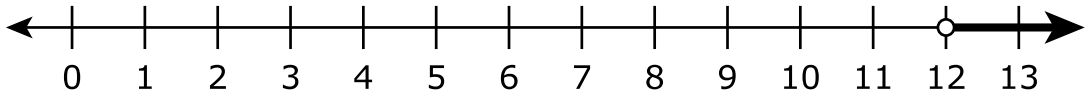
**C.** $23.41

**D.** $24.21

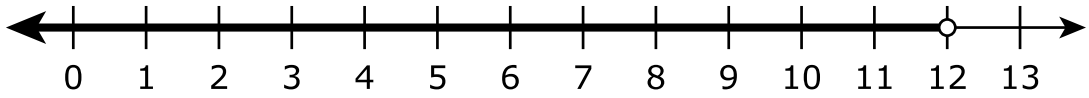
**00.** Which number line represents the solution to this inequality?

$$-\frac{5}{6}n + 4 > -6$$

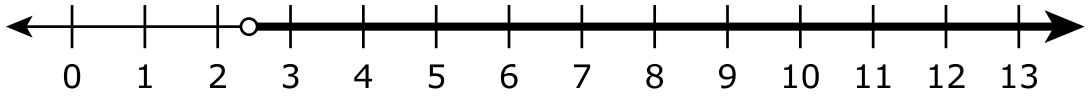
**A.**



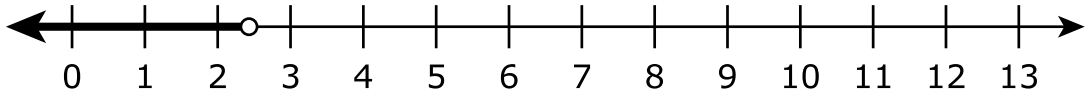

**B.**



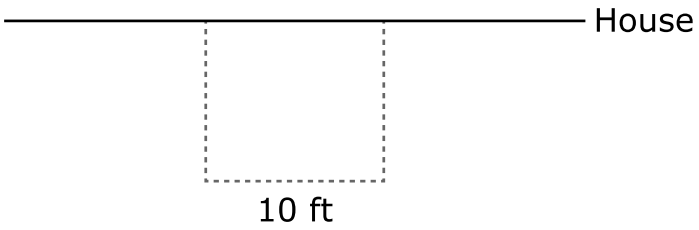

**C.**




**D.**



**00.** Jackie will use fencing on three sides of a rectangular garden that is against a house. The length of the garden is 10 feet, as shown in the diagram.




The total length of the fencing will be 28 feet.

What is the width of the garden, in feet?

**A.** 2.8

**B.** 4

**C.** 9

**D.** 18

**00.** The table shows the numbers of text messages Sondra sent from her phone over a six-day period.

**Daily Texts**

| Day | Number of Texts |
|---|---|
| Monday | 18 |
| Tuesday | 11 |
| Wednesday | 24 |
| Thursday | 7 |
| Friday | 25 |
| Saturday | 26 |

What was the median number of daily texts during the six-day period?

**A.** 18

**B.** 19

**C.** 21

**D.** 24

**00.** The table shows a relationship between $x$ and $y$.

| x | y |
|---|---|
| 0 | 0 |
| 7 | 3 |
| 14 | 6 |
| 21 | 9 |

What is the constant of proportionality in the relationship?

**A.** $\frac{3}{7}$

**B.** $\frac{7}{3}$

**C.** 3

**D.** 7

**00.** Jasper had $20 to spend. He bought one breakfast bar for $2.50 and some grapes that cost $1.25 per pound. The expression $20 - (2.50 + 1.25g)$ represents the amount of money Jasper had left, where $g$ is the number of pounds of grapes he bought.

Which expression is equivalent to $20 - (2.50 + 1.25g)$?

**A.** $17.50 + 1.25g$

**B.** $17.50 - 1.25g$

**C.** $16.25 + g$

**D.** $16.25 - g$

**00.** Triangle *FGH* is an acute triangle.

Which pair of numbers are possible measures of angles *F* and *G*?

**A.** $m\angle F = 20°$ and $m\angle G = 30°$

**B.** $m\angle F = 30°$ and $m\angle G = 30°$

**C.** $m\angle F = 40°$ and $m\angle G = 50°$

**D.** $m\angle F = 50°$ and $m\angle G = 50°$

**00.** A spinner divided into 10 equal sections is used to determine the number of moves a player can make on a board game. Each section of the spinner is labeled with a number 1, 2, 3, or 4. The table shows the number of times the arrow on the spinner landed on each number in 50 spins.

| Section Number | Number of Spins |
|---|---|
| 1 | 25 |
| 2 | 5 |
| 3 | 10 |
| 4 | 10 |

Based on the data in the table, which statements are best supported by the data?

Select the **two** correct answers.

**A.** There are 5 sections labeled with the number 1.

**B.** There are 4 sections labeled with the number 3.

**C.** There are 3 sections labeled with the number 4.

**D.** The probability that the arrow on the spinner will land on a section labeled with the number 3 is 20%.

**E.** The probability that the arrow on the spinner will land on a section labeled with the number 2 is 5%.

**00.** The table shows the regular prices for televisions of different sizes at a store.

**Television Prices by Size**

| Size | Regular Price |
|---|---|
| 32 inch | $138 |
| 36 inch | $168 |
| 40 inch | $198 |
| 42 inch | $228 |

All televisions at the store will be on sale for 25% off the regular price. Ken has a coupon for an additional 10% discount off the sale price.

What will be the cost of a 40-inch television, with the sale and discount?

**A.** $128.70

**B.** $133.65

**C.** $148.50

**D.** $178.20

**00.** The seventh-grade class is having a dance for a fund-raiser. The cost of decorations will be $700. Tickets will be sold for $12 each.

Which inequality can be used to find $x$, the number of tickets that can be sold so that the class raises at least $2,000 after the cost of decorations?

**A.** $x + 700 \geq 2{,}000$

**B.** $x - 700 \geq 2{,}000$

**C.** $12x + 700 \geq 2{,}000$

**D.** $12x - 700 \geq 2{,}000$

**00.** Which expression is equivalent to $\frac{4}{5}(20k - 45)$?

**A.** $16k - 36$

**B.** $16k - 45$

**C.** $20\frac{4}{5}k - 45$

**D.** $20\frac{4}{5}k - 45\frac{4}{5}$

Tennessee Comprehensive Assessment Program TCAP
Math
Grade 7 Test Practice
Spring 2025


1163214 1 2 3 4 5 A B C D E Printed in the USA ISD42302