Name _____
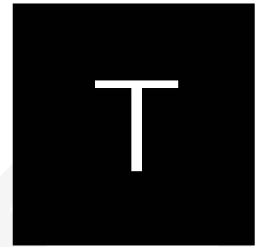
Grade 4

Form T

**T**

# North Carolina

# End-of-Grade Tests–Grade 4

Mathematics—Calculator Active

Mathematics—Calculator Inactive (page 15)

Public Schools of North Carolina
www.ncpublicschools.org
State Board of Education
Department of Public Instruction
Division of Accountability Services/North Carolina Testing Program
Raleigh, North Carolina 27699-6314

EOG

NCDPI                                                                                   North Carolina Test of Mathematics.  Grade 4 Form T RELEASED  Fall 2009

1. A group of students solved 10,800 math problems during Math Week.  Each student solved 75 problems.  How many students solved problems during Math Week?

   A        135

   B        144

   C     10,725

   D   810,000

2. Joey entered a pie-eating contest and came in second place.  The first place winner ate $2\frac{3}{4}$ pies, and the third place winner ate $1\frac{1}{2}$ pies.  How many pies could Joey have eaten?

   A     $\frac{3}{4}$

   B     $1\frac{1}{4}$

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

   D     $2\frac{4}{4}$

3. What is the sum shown in the diagram?
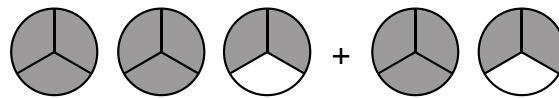

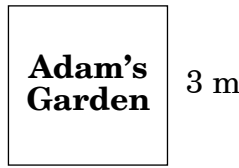
   A     $3\frac{1}{3}$

   B     $3\frac{2}{3}$

   C     $4\frac{1}{3}$

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

4. Peter decided to exercise on Saturday and Sunday.  On Saturday, he jogged $1\frac{1}{2}$ miles.  On Sunday, he jogged twice as far.  How far did Peter jog in the two-day period?

   A     9 miles

   B     $4\frac{1}{2}$ miles

   C     3 miles
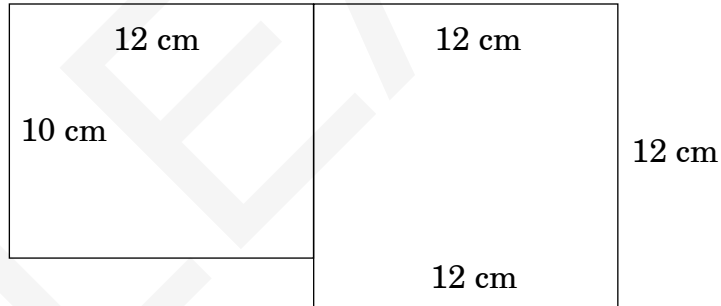
   D     $2\frac{1}{4}$ miles

5.    Adam needs to put a fence around his square garden to keep out rabbits.  One side of the garden measures 3 m.

**Adam's Garden**  | 3 m

How many meters of fencing will he need?

A      6 m

B      9 m

C     12 m

D     81 m

---

6.    Sally placed two sheets of paper side by side as shown below.

12 cm
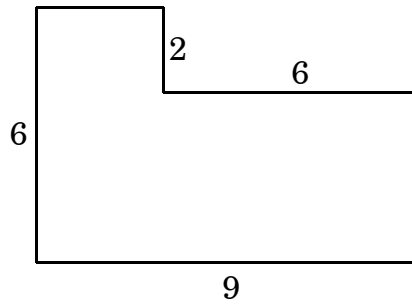
10 cm

12 cm

12 cm

12 cm

12 cm

What is the total area of the two sheets of paper?

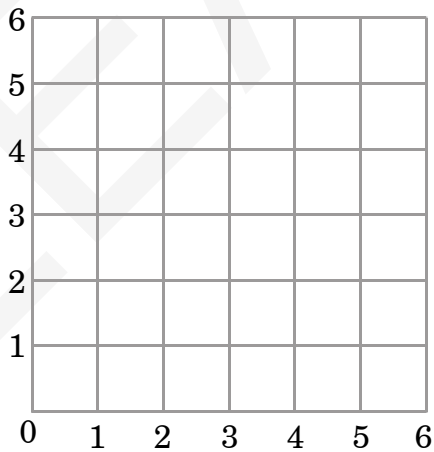A      72 sq cm

B      92 sq cm

C     240 sq cm

D     264 sq cm

7.    What is the perimeter of this figure?
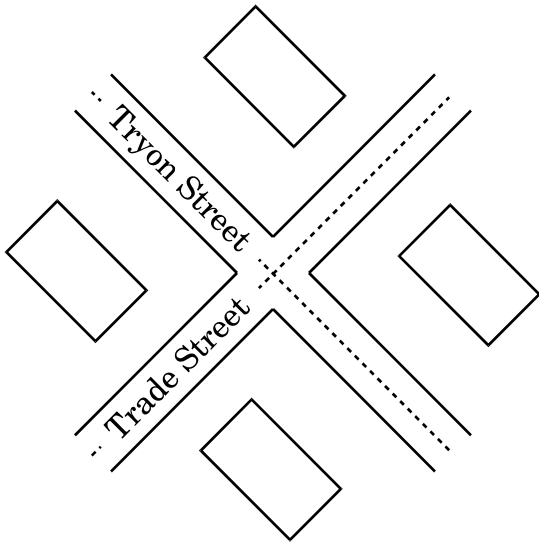
    A    23 units

    B    27 units

    C    30 units

    D    54 units

8.    Delia connected the points in the order they were given: (3, 6), (1, 2), (5, 2), and (3, 6).

    What polygon did she create?

    A    triangle

    B    rectangle

    C    square

    D    pentagon
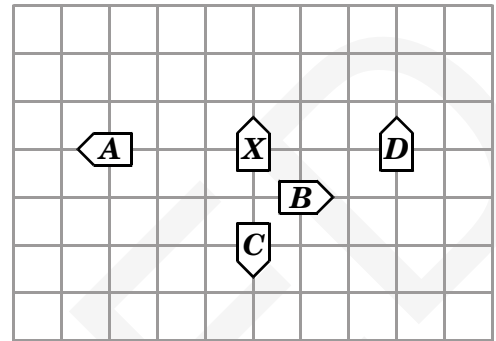
9.    Trade Street and Tryon Street are two
      streets in a large city.



      Which term describes the two streets?

      A    parallel

      B    perpendicular

      C    acute

      D    horizontal

10.   Which house shows only a translation
      of house *X*?



      A    house *A*

      B    house *B*

      C    house *C*

      D    house *D*

11. How many children went to the zoo on Tuesday?

**People Going to the Zoo**

| Day | Number |
|---|---|
| Monday | △△△ ▭▭ △△ ▭▭ |
| Tuesday | △△ ▭▭ △◿ ▭ |
| Wednesday | △△ ▭▭ ◿ ▭▭ |

△ = 10 children

▭ = 6 adults

A   18

B   30

C   35

D   40

12. The scores from a class quiz on geometry were as follows:

82, 90, 82, 76, 95, 76, 76, 97, 90

What is the mode of this set of quiz grades?

A   76

B   82

C   90

D   95

13. Matthew and Carla kept track of the number of questions they answered correctly on the weekly math quizzes. Each quiz had 10 questions.

**Math Questions Answered Correctly**

| Weekly Quiz | Matthew | Carla |
|:---:|:---:|:---:|
| Week 1 | 8 | 10 |
| Week 2 | 6 | 8 |
| Week 3 | 9 | 5 |
| Week 4 | 7 | 9 |
| Week 5 | 10 | 9 |

Which student answered more quiz questions correctly over the five weeks, and how many more?

A    Carla; one more

B    Matthew; one more

C    Carla; two more

D    They both answered the same number correctly.

14. Which set of data has a range of 12 and a median of 58?

A    59, 51, 52, 63, 58

B    66, 73, 54, 58, 55

C    58, 61, 58, 70, 60

D    72, 49, 50, 58, 60

15. There are always 2 adults in the game room. The number of children ($n$) in the room changes each hour. Which expression represents the number of people in the game room at any time?

A    $2 - n$

B    $2 + n$

C    $2 - 1 + n$

D    $2 + 1 + n$

16.   Which chart shows the rule that the output value is two less than the input value?

A

| Input | Output |
|-------|--------|
| 5     | 7      |
| 8     | 10     |
| 11    | 13     |
| 12    | 14     |

B

| Input | Output |
|-------|--------|
| 5     | 3      |
| 8     | 4      |
| 11    | 9      |
| 12    | 10     |

C

| Input | Output |
|-------|--------|
| 5     | 10     |
| 8     | 16     |
| 11    | 22     |
| 12    | 24     |

D

| Input | Output |
|-------|--------|
| 5     | 3      |
| 8     | 6      |
| 11    | 9      |
| 12    | 10     |

17.   The bread truck makes deliveries to a store 3 days each week.  Each delivery has 45 loaves of bread.  Which expression could be used to determine the number of loaves of bread delivered in 5 weeks?

A    $3 \times 5$

B    $45 \div (3 \times 5)$

C    $45 \times 3$

D    $45 \times 3 \times 5$

18.   Michael cuts grass for $15.00 per lawn.  He cuts 2 lawns each day for 6 days a week.  How much will Michael earn in 2 weeks?

A    $390

B    $360

C    $180

D    $90

19. Cara used this multiplication table to help her find the quotient for $112 \div 14$.

**Multiplication Table**

| × | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|
| 6 | 60 | 66 | 72 | 78 | 84 | 90 | 96 |
| 7 | 70 | 77 | 84 | 91 | 98 | 105 | 112 |
| 8 | 80 | 88 | 96 | 104 | 112 | 120 | 128 |
| 9 | 90 | 99 | 108 | 117 | 126 | 135 | 144 |
| 10 | 100 | 110 | 120 | 130 | 140 | 150 | 160 |
| 11 | 110 | 121 | 132 | 143 | 154 | 165 | 176 |

What answer should Cara get?

A    16

B    11

C    8

D    7

20. Mrs. Jones has some baskets of strawberries to sell.  She has 52 baskets each containing 3 pounds of strawberries and 48 smaller baskets each containing 2 pounds of strawberries. *About* how much will her strawberries weigh in all?

A    250 pounds

B    200 pounds

C    150 pounds

D    100 pounds

21. Sallie baked 4 apple pies and cut each of them into sixths.  If she served $3\frac{1}{2}$ pies, how many slices of pie did Sallie serve?

A    24

B    21

C    18

D    9

22. Clint's teacher asked him to write two fractions that are equivalent to $\frac{2}{5}$.  If Clint did this problem correctly, which answer did Clint write?

A    $\frac{2}{10}$ and $\frac{4}{10}$

B    $\frac{4}{10}$ and $\frac{6}{10}$

C    $\frac{2}{10}$ and $\frac{20}{100}$

D    $\frac{4}{10}$ and $\frac{40}{100}$

23.  Blake's mother is ordering tile flooring for three rooms.  The first room measures 10 feet by 12 feet.  The second room measures 20 feet by 25 feet. The third room measures 14 feet by 16 feet.  How much area must the tile flooring cover in all?

A    660 sq ft

B    720 sq ft

C    844 sq ft

D    1,500 sq ft

24.  Juan's garden is rectangular with a length of 10 feet and a width of 6 feet. He is buying fencing to go around the entire garden.  The fencing is sold in pieces that are each 2 feet long.  How many pieces should he purchase?

A    8

B    16

C    26

D    32

25.  Mrs. Moore's rectangular classroom is 30 feet long and 25 feet wide.  When she moves to her new school, her classroom will be 45 feet long and 30 feet wide.  How many more square feet will she have in her new classroom?

A    40 square feet

B    75 square feet

C    600 square feet

D    1,350 square feet

26.    The map below shows the streets near Jocelyn's home.



Davis Street

Everett Street

Broad Street
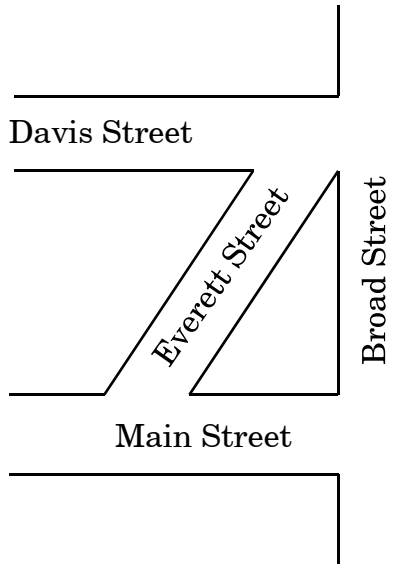
Main Street

Which two streets are parallel?

A    Davis Street and Main Street

B    Davis Street and Everett Street

C    Main Street and Everett Street
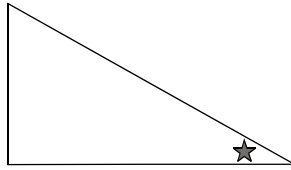
D    Main Street and Broad Street

27.    Which of these points is closest to $(0, 0)$ when graphed on the coordinate plane shown?
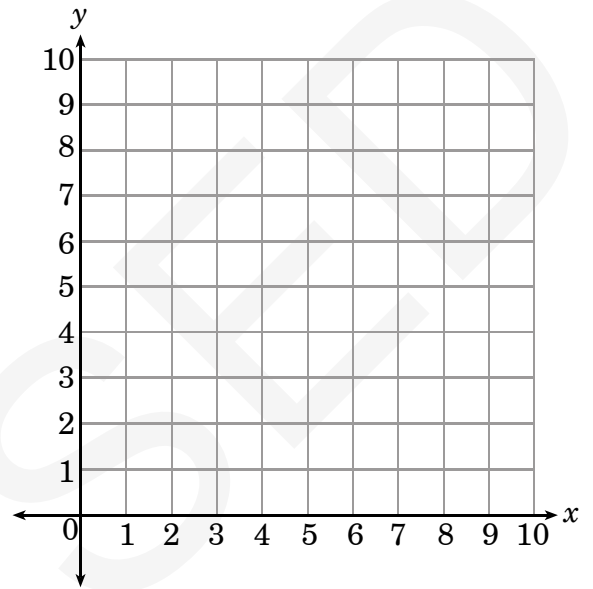


A    $(1, 5)$
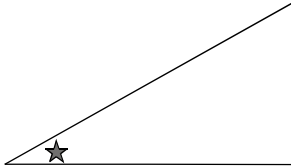
B    $(3, 3)$

C    $(4, 2)$

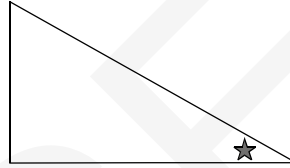D    $(3, 0)$

28.  Ann rotates this triangle 90° clockwise.

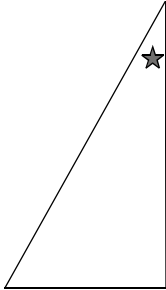Which choice shows Ann's triangle after the 90° rotation?
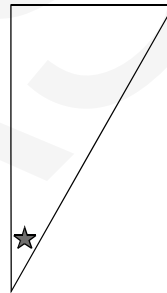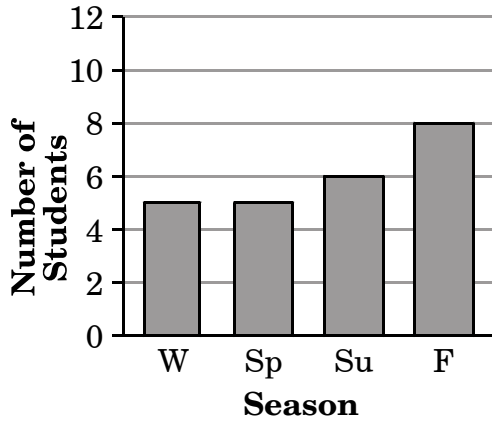
A

B

C

D

29. Ms. Rogers has a class of 24 students.  In that class, the number of students with fall birthdays is two more than the number with summer birthdays.  Six students have summer birthdays.  The remaining students' birthdays are evenly split between winter and spring.  Which graph correctly displays these data?

A  **Birthdays in Each Season**

B  **Birthdays in Each Season**
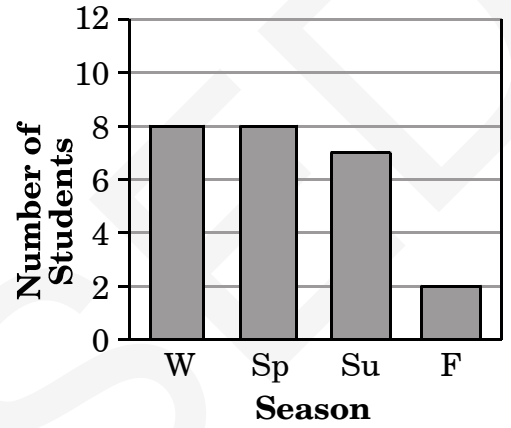
C  **Birthdays in Each Season**

D  **Birthdays in Each Season**

| Key |
| --- |
| W = Winter |
| Sp = Spring |
| Su = Summer |
| F = Fall |

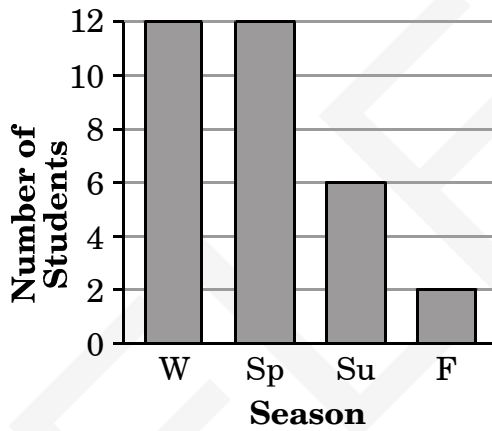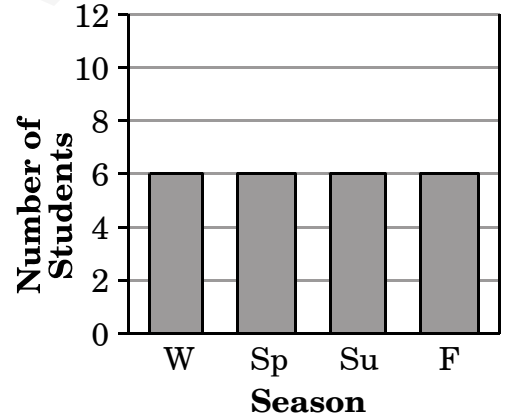30.  The ages of the 15 teachers at Long Beach Elementary are 32, 49, 38, 52, 47, 62, 38, 56, 38, 42, 65, 45, 58, 26, and 48.  What are the mode and median of their ages?

A    mode 38; median 47

B    mode 38; median 56

C    mode 47; median 38

D    mode 47; median 56

31.  Mike's sailboat is at sea and is traveling toward shore.  The graph below shows how the distance to the shore changes.

**Distance to Shore**
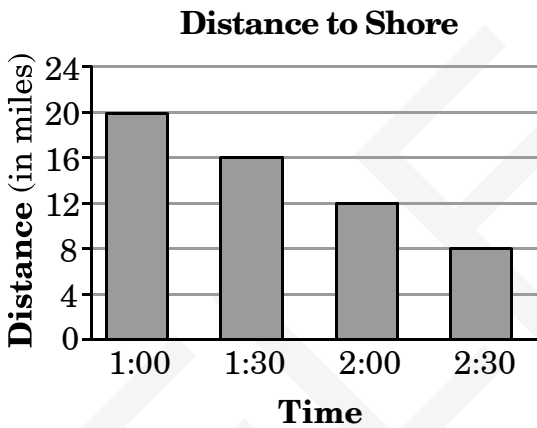


At what time will Mike reach the shore if he keeps sailing at the same rate?

A    3:00

B    3:30

C    4:00

D    4:30

32.  Andre has a group of five white cards and a group of five black cards.  Each group of cards is numbered from 1 to 5.
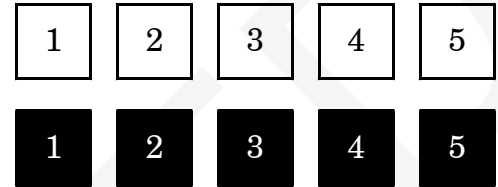


If Andre were to take one white card and one black card at the same time, how many ways could he get a sum of 6?

A    1

B    2

C    5

D    10

NCDPI

North Carolina Test of Mathematics.  Grade 4 Form T RELEASED  Fall 2009

33.    Which value would correctly complete this table?

| Number of Laps | Time (minutes) |
|---|---|
| 1 | 5 |
| 2 | 10 |
| 4 | |
| 8 | 40 |
| 16 | 80 |

A    15

B    20

C    25

D    40

34.    Each honor student's high school diploma gets one gold seal glued to it. Adams High School has $h$ honor students.  Which expression shows the number of gold seals needed?

A    $h - 1$

B    $h + 1$

C    $h \div h$

D    $h \times 1$

35.    Mrs. Richards wrote $J \times 2 = K$ on the board.  What numbers could replace $J$ and $K$ to make this equation true?

A    $J = 2,\ K = 6$

B    $J = 3,\ K = 3$

C    $J = 4,\ K = 8$

D    $J = 6,\ K = 3$

36.    When Jennifer buys items at the grocery store with prices totaling $10.00, she pays an additional $0.50 for tax.  She went grocery shopping last week and bought items with prices totaling $200.00.  How much tax did Jennifer pay?

A        $0.20

B        $10.00

C        $20.00

D    $100.00

STOP

**End of Mathematics—Calculator Active**

1.   There are 14,508 books in the library. How should this number be written in expanded form?

   A   $10,000 + 4,000 + 500 + 80$

   B   $10,000 + 4,000 + 500 + 8$

   C   $10,000 + 4,000 + 50 + 8$

   D   $10,000 + 400 + 50 + 8$

2.   Some pennies were on the table.  Erin saw that 56 were heads up and 44 were tails up.  What fraction of the pennies were heads up?

   A   $\frac{56}{100}$

   B   $\frac{44}{100}$

   C   $\frac{56}{44}$

   D   $\frac{44}{56}$

3.   There are 18 teams in the softball league.  Each team has 13 players. How many players are in the league?

   A    31

   B    72

   C   234

   D   504

4.   Harry mixed 1.3 liters of grape juice, 2.3 liters of ginger ale, and 1.7 liters of orange juice for punch.  **About** how many liters of punch did Harry make?

   A   7

   B   6

   C   5

   D   4

5.   LaNell gathered $5\frac{3}{4}$ bushels of beans, $8\frac{1}{4}$ bushels of corn, and $9\frac{1}{4}$ bushels of cucumbers.  How many bushels of vegetables did she gather altogether?

   A   14

   B   $17\frac{1}{2}$

   C   22

   D   $23\frac{1}{4}$

6.  Antwan began his trip in Charlotte with 18.8 gallons of gas in his car. He used 4.2 gallons of gas driving from Charlotte to Greensboro and another 8.9 gallons driving from Greensboro to Wilmington. *About* how much gas did Antwan have left in his car when he arrived in Wilmington?

    A     6 gallons

    B     10 gallons

    C     15 gallons

    D     32 gallons

7.  Jill needs 5 slices of meat to make a sandwich. There are 41 slices of meat in each package. *About* how many complete sandwiches can Jill make from 8 packages of meat?

    A     54

    B     64
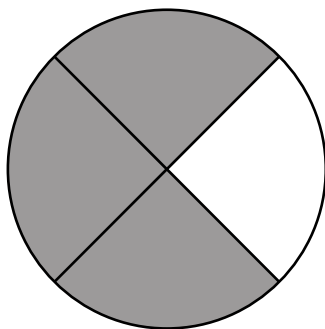
    C     80

    D     82

8.  Joan completed $\frac{3}{8}$ of her jigsaw puzzle the first night. The next night, she completed another $\frac{2}{8}$ of the puzzle. How much of the puzzle was left to complete for the third night?

    A     $\frac{1}{8}$

    B     $\frac{2}{8}$

    C     $\frac{3}{8}$

    D     $\frac{5}{8}$

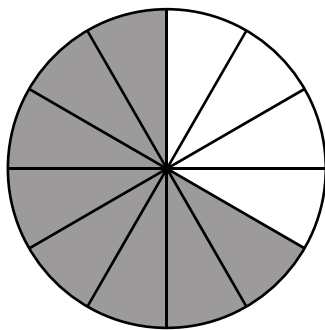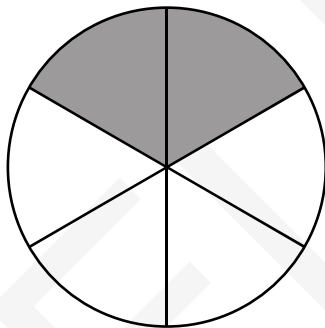9. Which shaded region is equivalent to $\frac{2}{3}$?
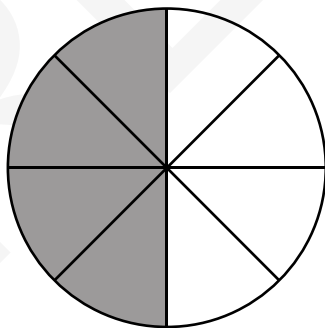
A



B



C



D



10. Last month, Sarah read for 30.2 hours, and Michael read for 34.2 hours.  In which place value do these two numbers differ?

A    ones

B    tens

C    tenths

D    hundredths

11. In which equation could $w$ have a value of 16 and $y$ have a value of 17?

A    $w - 1 = y$

B    $w \times 1 = y$

C    $w + 1 = y$

D    $2 \times w - 5 = y$

12. Carla has 4 packages of socks, and Jenna has 1 package of socks. Each package has 6 pairs of socks. Carla found the total number of pairs of socks by adding $(6 \times 4) + (6 \times 1)$. Jenna used a different method but got the same answer. Which strategy did Jenna use?

A    $6 + 4 + 1$

B    $6 \times 4 + 1$

C    $(6 \times 1) + 4$

D    $6 \times (4 + 1)$

13. Megan read this recipe:

> 2 cups flour
>
> 1 cup sugar
>
> $\frac{1}{2}$ cup butter
>
> 2 eggs

She had 4 cups of flour and wanted to use all of it. What amounts of the other ingredients should Megan use?

A    2 cups sugar, 1 cup butter, 4 eggs

B    2 cups sugar, 1 cup butter, 2 eggs

C    1 cup sugar, 1 cup butter, 4 eggs

D    $\frac{1}{2}$ cup sugar, $\frac{1}{4}$ cup butter, 1 egg

14. Kathy created an input/output machine.

| Input | Output |
| --- | --- |
| 1 | 5 |
| 2 | 7 |
| 3 | 9 |
| 4 | 11 |
| 5 | 13 |
| 6 | 15 |
| 7 | 17 |

What will be the output when 14 is the input?

A    18

B    19

C    24

D    31

STOP

**End of Mathematics—Calculator Inactive**

# North Carolina Test of Mathematics
## Grade 4 Form T RELEASED Fall 2009
## Answer Key

CALCULATOR ACTIVE

| Item Number | Correct Answer | Goal |
|:---:|:---:|:---|
| 1 | B | 1 — Number and Operations |
| 2 | C | 1 — Number and Operations |
| 3 | C | 1 — Number and Operations |
| 4 | B | 1 — Number and Operations |
| 5 | C | 2 — Measurement |
| 6 | D | 2 — Measurement |
| 7 | C | 2 — Measurement |
| 8 | A | 3 — Geometry |
| 9 | B | 3 — Geometry |
| 10 | D | 3 — Geometry |
| 11 | C | 4 — Data Analysis and Probability |
| 12 | A | 4 — Data Analysis and Probability |
| 13 | A | 4 — Data Analysis and Probability |
| 14 | A | 4 — Data Analysis and Probability |
| 15 | B | 5 — Algebra |
| 16 | D | 5 — Algebra |
| 17 | D | 5 — Algebra |
| 18 | B | 5 — Algebra |
| 19 | C | 1 — Number and Operations |
| 20 | A | 1 — Number and Operations |
| 21 | B | 1 — Number and Operations |
| 22 | D | 1 — Number and Operations |
| 23 | C | 2 — Measurement |
| 24 | B | 2 — Measurement |
| 25 | C | 2 — Measurement |
| 26 | A | 3 — Geometry |
| 27 | D | 3 — Geometry |
| 28 | D | 3 — Geometry |
| 29 | A | 4 — Data Analysis and Probability |
| 30 | A | 4 — Data Analysis and Probability |
| 31 | B | 4 — Data Analysis and Probability |
| 32 | C | 4 — Data Analysis and Probability |
| 33 | B | 5 — Algebra |
| 34 | D | 5 — Algebra |
| 35 | C | 5 — Algebra |
| 36 | B | 5 — Algebra |

# North Carolina Test of Mathematics
## Grade 4 Form T RELEASED Fall 2009
## Answer Key

CALCULATOR INACTIVE

| Item Number | Correct Answer | Goal |
|---|---|---|
| 1 | B | 1 — Number and Operations |
| 2 | A | 1 — Number and Operations |
| 3 | C | 1 — Number and Operations |
| 4 | C | 1 — Number and Operations |
| 5 | D | 1 — Number and Operations |
| 6 | A | 1 — Number and Operations |
| 7 | B | 1 — Number and Operations |
| 8 | C | 1 — Number and Operations |
| 9 | B | 1 — Number and Operations |
| 10 | A | 1 — Number and Operations |
| 11 | C | 5 — Algebra |
| 12 | D | 5 — Algebra |
| 13 | A | 5 — Algebra |
| 14 | D | 5 — Algebra |

# North Carolina Test of Mathematics
## Grade 4 Form T RELEASED Fall 2009
## Raw to Scale Score Conversion

| Raw Score | Scale Score |
|-----------|-------------|
| 0 | 319 |
| 1 | 320 |
| 2 | 321 |
| 3 | 321 |
| 4 | 322 |
| 5 | 323 |
| 6 | 324 |
| 7 | 325 |
| 8 | 326 |
| 9 | 327 |
| 10 | 329 |
| 11 | 330 |
| 12 | 331 |
| 13 | 332 |
| 14 | 334 |
| 15 | 335 |
| 16 | 336 |
| 17 | 337 |
| 18 | 338 |
| 19 | 340 |
| 20 | 341 |
| 21 | 342 |
| 22 | 343 |
| 23 | 344 |
| 24 | 344 |
| 25 | 345 |
| 26 | 346 |
| 27 | 347 |
| 28 | 348 |
| 29 | 348 |
| 30 | 349 |
| 31 | 350 |
| 32 | 351 |
| 33 | 352 |
| 34 | 352 |
| 35 | 353 |
| 36 | 354 |
| 37 | 355 |
| 38 | 355 |
| 39 | 356 |
| 40 | 357 |
| 41 | 358 |

| | |
|---|---|
| 42 | 359 |
| 43 | 360 |
| 44 | 361 |
| 45 | 363 |
| 46 | 364 |
| 47 | 366 |
| 48 | 367 |
| 49 | 370 |
| 50 | 373 |