

Elementary Math Field Day – 2018

4th Grade

Name _____ School _____

PUT BOTH YOUR FIRST AND LAST NAME

Number Sense and Mathematical Reasoning (remember ● means multiply and so does 5(6)).

1) $(25)(12)(9)(4) =$

2) If you have 85 nickels, how many more nickels would you need to have \$5.00?

3) $3 + 4 \times 8 + 5 \div 5$

4) If you divide 42,757 by 5, your remainder will be what number?

5) Which of these numbers does NOT divide into 96 without a remainder?

A. 6 B. 8 C. 14 D. 12 E. 16

6) Jack gets 7 out of 12 problems correct on a math contest. At the same rate, how many problems will Jack get correct out of 48 problems?

7) $3460 - 1579 =$

8) $3.55 - 1.472 =$

9) $17(342) + 3(342) =$

- 10) A fence that runs across Aaron's backyard is supported by 28 posts. Each post is three yards from the next post. How long in yards is the fence?
- 11) How many dimes are worth 126 quarters?
- 12) If you were going to divide 3421 by 4, what is the smallest number you could add to 3421 so that there would be NO remainder?

Algebra and Functions

- 13) If $a = 23$, what is the value of $400 - (a + 9)$?
- 14) Tell WHY $3 + 15 \times 4 = 63$ and NOT 72.
- 15) If $a = 9$, what is the value of $15a - 3$?
- 16) If $5x + 1 = 41$, what is the value of $15x + 3$?

Measurement and Geometry

- 17) A square has a perimeter of 48 inches. What is its area?
- 18) Emma planted a vegetable garden. It was 24 feet by 8 feet. The vegetables were growing nicely and then the neighbor's dog got into her yard and plowed up a 2 foot by 3 foot area of vegetables. How many square feet of vegetables are left?

- 19) Rectangle A has a length of 12 cm and a width of 9 cm. Rectangle B has a length of 14 cm and a width of 7 cm. Which one of these statements is true?
- A. They both have the same width.
 - B. They both have the same length.
 - C. They both have the same perimeter.
 - D. They both have the same area.

Probability and Statistics

- 20) Ariana has a bag with 10 red marbles, 6 blue marbles, 2 green marbles and 6 purple marbles. All the marbles are the same size. If she pulls out 1 marble without looking, what is the probability it will be green? *Express as a fraction in simplest form.*
- 21) What is the mode of this set of numbers? **{6, 3, 3, 3, 4, 8, 12}**
- 22) Jenna's teacher told her she could have as many pencils as the **mean, median or mode** of these numbers. Which of the three, mean, median or mode, would give Jenna the most pencils?
{ 25, 35, 35, 55, 70, 110}

Problem Solving

- 23) Owen has \$28. Rides at the school carnival are \$4 for one ride or \$8 for 3 rides. What is the greatest number of rides Owen can purchase using all \$28?
- 24) Vanessa's grandfather gave half of his money to his oldest son, Spencer. Then he gave one third of the *remaining* money to Vanessa. Then there was \$1500 left. How much money did Vanessa's grandfather start with?

- 25) What is the next number in this pattern? 5, 6, 11, 17, 28, ----
- 26) Maya bought 3 apples at a cost of 55 cents each and she also bought 4 oranges at a cost of 45 cents each. How much change did she receive from \$10.00?
- 27) Anthony swims in the pool. When he first started, he completed 10 laps in 25 minutes. Now he can finish 12 laps in 24 minutes. By how many minutes has Anthony improved the time he needed to swim one lap?
- 28) Alexandria had \$50 to spend at the carnival. She spent \$12 on food and twice as much on rides. How much did she have left to spend?
- 29) Amy read 36 pages of a book at night for three nights and 48 pages a night for the next three nights. On the seventh night, she had to hurry to finish the book. She had to read 84 pages. How long was the book?
- 30) A number is multiplied by 16 and then 4 is added. The result is 452. What was the number?

The next page is tie-breakers to be used in case of ties.

Tie-Breakers

- A. The sum of the first 3 positive ODD numbers is 9. The sum of the first 4 positive ODD numbers is 16. The sum of the first 5 positive ODD numbers is 25. The sum of the first 6 positive ODD numbers is 36. What is the sum of the first 14 positive ODD numbers?
- B. Caeden walked 2 blocks on Sunday, 4 blocks on Monday, 6 blocks on Tuesday, 8 blocks on Wednesday, continuing in the same pattern. On what day of the week will Caeden walk 20 blocks?
- C. Audrey has five more pairs of shoes than Jackie. Viviana has twice as many pairs of shoes as Audrey. Altogether the girls have 39 pairs of shoes. How many pairs of shoes does Viviana have?
- D. A roller coaster can give 5 people rides in 3 minutes. A Ferris wheel can give 11 people rides in 2 minutes. In 12 minutes, how many MORE people can ride the Ferris wheel than can ride the roller coaster?
- E. A rectangle has an area of 60 square centimeters. The length and width are both whole numbers. What is the largest perimeter it could have?

Brain Teasers 2018 4th Grade

Name _____ School _____

- 1) Chandler wants to buy a \$500 mountain bike. For his birthday, his grandparents sent him \$50 and his aunt sent him \$35 and his cousin gave him \$15. He earns \$16 per week in his tutoring job. He will use all of his birthday money and all of the money he earns tutoring. In how many weeks will he be able to buy the mountain bike?

- 2) On average, for every 4 sports cars sold at the local dealership, 7 sedans are sold. The dealership predicts that it will sell 28 sports cars next month. How many sedans does it expect to sell?

- 3) A sequence of numbers starts with 1, 2 and 3. The fourth number of the sequence is the sum of the previous three numbers. This pattern of adding three numbers to get the next number continues. What is the eighth number in the sequence?

- 4) Two out of every 356 students surveyed at Adams Middle School want more homework. At the same rate, how many students out of 1424 students would want more homework?

- 5) Six rectangles each with a common width of 2 have lengths of 1, 4, 9, 16, 25 and 36. What is the sum of the areas of the six rectangles?

- 6) Soda is sold in packs of 6, 12 and 24 cans. What is the minimum number of packs needed to buy exactly 90 cans of soda?

7) Eric has 17 coins with a total value of 76 cents. The coins are nickels, dimes, and pennies. He has 5 more nickels than dimes and twice as many pennies as dimes. What is the number of nickels?

For 8, 9, and 10 EXPLAIN in numbers and words how you solved each problem. Place your written explanation on the ANSWER SHEET.

8) Eight friends ate at a restaurant and agreed to share the bill equally. Because Judy forgot her money, each of her seven friends paid an extra \$2.50 to cover her portion of the total bill. What was the total bill?

9) Anthony weighs 106 pounds. His four quadruplet (4) sisters are tiny babies and weigh 5, 5, 6 and 8 pounds. Which is greater, the mean weight of these 5 children or the median weight, and by how many pounds?

10) Jackie must take four 100-point tests in her math class. Her goal is to achieve an average of 95 on the tests. Her first two test scores were 97 and 91. After seeing her score on her third test, she realized that she can still reach her goal. What is the lowest possible score she could have made on her third test?

Elementary Math Field Day – 2018

5th Grade

Name----- School-----

Number Sense and Mathematical Reasoning (remember • means multiply and so does 5(6)).

1) $(25)(22)(16)(4) =$

2) If you add 99 odd numbers is the sum ODD or EVEN?

3) $(3 + 4) \times 8 + 5 \times 5 + 6 \div 6 =$

4) If you divide 428,783 by 5, your remainder will be what number?

5) Which of these numbers does NOT divide into 180 without a remainder?

A. 6 B. 8 C. 36 D. 16 E. 15

6) Jack gets 7 out of 12 problems correct on a math contest. At the same rate, how many problems will Jack get correct out of 132 problems?

7) $15.67 - 3.893$

Number and Operatons - Fractions

- 8) Two-thirds of 72 plus one-fifth of 35 =
- 9) Fifty-two people will eat 4 ounces of rice each. If there are 16 ounces in a pound, how many pounds of rice will be needed?
- 10) Which is greater? $5/12$ or $11/25$?
- 11) Three-fourths of 424 is the same as three times what number?

Algebra and Functions

- 12) If $a = 24$, what is the value of $300 - (a + 19)$?
- 13) $10^6(345.72)$ ends in how many zeros?
- 14) If $5x + 4 = 74$, what is $15x + 12$?

Measurement and Geometry

- 15) A square has a perimeter of 48 inches. What is its area?

- 16) Three rectangular prisms, each 5 cm by 6 cm by 8 cm are stacked on top of each other. What is the total volume of the new rectangular prism?
- 17) If angle A of triangle ABC is 33 degrees, angle B is 66 degrees, what is the measure of angle C?
- 18) The two smaller angles of a parallelogram are both 36 degrees. What is the measure of one of the two larger angles?
- 19) Rectangle A has a length of 12 cm and a width of 9 cm. Rectangle B has a length of 14 cm and a width of 7 cm. Which one of these statements is true?
- A. They both have the same width.
 - B. They both have the same length.
 - C. They both have the same perimeter.
 - D. They both have the same area.

Probability and Statistics

- 20) Ariana has a bag with 10 red marbles, 6 blue marbles, 2 green marbles and 6 purple marbles. All the marbles are the same size. If she pulls out 1 marble without looking, what is the probability it will be red? *Express as a fraction in simplest form.*
- 21) What is the median of this set of numbers? {6, 3, 3, 3, 4, 8, 12, 15}

- 22) Jenna's teacher told her she could have as many pencils as the **mean, median or mode** of these numbers. Which of the three, mean, median or mode, would give Jenna the most pencils?
{ 25, 35, 35, 55, 60, 90 }

Problem Solving

- 23) Five friends on a trip pay \$540 each to share the rent of a large town house for a week. How many friends would it take to bring the rent down to \$225 each?
- 24) Vanessa's grandfather gave half of his money to his oldest son, Spencer. Then he gave three-fourths of the *remaining* money to Vanessa. Then there was \$8400 left. How much money did Vanessa's grandfather start with?
- 25) Beth wanted to buy a new cell phone. She was told that her contract was not up yet, so she would have to pay \$480. She tried to negotiate a better price by saying she would go to another cell phone company. They offered her a deal where they would give her a 45% discount. How much would she then have to pay for the new cell phone?
- 26) Aaron has \$210 and Jaron has \$460. They were each given an equal amount. Then Jaron had twice as much money as Aaron had. How much money did each person receive?

- 27) On a map, a 12-centimeter length represents 72 kilometers. How many kilometers does a 17-centimeter length represent?
- 28) Twelve friends met for dinner at the Oscar's Restaurant. Each ordered one meal. The portions were so large that there was enough food for 18 people. If they shared, how many meals should they have ordered to have just enough food for the 12 of them?
- 29) After Sally takes 20 basketball shots, she made 55% of her shots. After she takes 5 more shots, she raises her percentage to 56%. How many of the last 5 shots did she make?
- 30) Jason has saved 2.5 times as much money as Kylie. Kylie has saved \$240. How much money has Jason saved?

Tie-Breakers (to be used only in case of ties) SEE NEXT PAGE ...

- A. The average of 5 numbers is 54. The average of the first two numbers is 48. What is the average of the last three numbers?**
- B. Two 600 mL pitchers contain orange juice. One pitcher is one-third full and the other pitcher is two-fifths full. Water is added to each pitcher to fill it completely. Then both pitchers are poured into one large container. What fraction of the mixture (in lowest terms) in the large container is orange juice?**
- C. Find the difference between the sum of the first 10 positive EVEN numbers and the sum of the first 10 positive ODD numbers.**
- D. A square has a perimeter of 60 centimeters. What is the area of the square?**
- E. A number is a palindrome if it reads the same backwards or forwards, such as the number 25752 or the word "radar". If a number is not a palindrome, it can be made into a palindrome using the process of "reverse and add". 76 is not a palindrome, but using the process $76 + 67 = 143$, still not a palindrome. $143 + 341 = 484$, which is a palindrome. 76 was made into a palindrome USING TWO STEPS. How many STEPS must you use, taking "reverse and add", to make a palindrome if you start with 79?**

Brain Teasers 2018 5th Grade

Name----- School -----

- 1) Matthew ate 100 delicious yellow bananas from May 1 *through* May 5. Each day he ate six more bananas than on the previous day. How many delicious bananas did Matthew eat on May 5.

- 2) Amy needs to replace a light bulb located 10 centimeters below the ceiling in her kitchen. The ceiling is 2.4 meters above the floor. Amy is 1.5 meters tall and can reach 46 centimeters above the top of her head. Standing on a stool, she can reach the light bulb. What is the height of the stool, in centimeters?

- 3) A sequence of numbers starts with 1, 2, and 3. The fourth number of the sequence is the sum of the previous three numbers. The pattern continues in the same way. What is the 9th number in the sequence?

- 4) The ten-letter code BEST OF LUCK represents the ten digits 0 through 9, in order. What 4-digit number is represented by the code word CLUE?

- 5) The average age of 6 people in Room A is 40. The average age of the 4 people in Room B is 25. If the two groups are combined, what is the average age of all ten people?

- 6) Tammy's parents have agreed to buy her tickets to see her favorite band if she spends an average of 10 hours per week helping around the house for 6 weeks. For the first 5 weeks she helps around the house for 8, 11, 7, 12 and 10 hours. How many hours must she work for the final week to earn the tickets?

- 7) A rectangular photograph is placed in a frame that forms a border 2 inches wide on all sides of the photograph. The photograph measures 8 inches high and 10 inches wide. What is the area of the border, in square inches?

For 8, 9 and 10 EXPLAIN in numbers and words how you solved each problem. Place your written explanation on the ANSWER sheet.

- 8) Eight friends ate at a restaurant and agreed to share the bill equally. Because Judy forgot her money, each of her seven friends paid an extra \$2.50 to cover her portion of the total bill. What was the total bill?
- 9) Karl bought five folders from Pay-A-Lot at a cost of \$2.50 each. Pay-A-Lot had a 20% off sale the following day. How much could Karl have saved on the purchase by waiting a day?
- 10) The taxi fare in St. Louis is \$2.40 for the first half mile and additional mileage charged at the rate of \$0.20 for each additional one tenth of a mile. You plan to give the driver a \$2.00 tip. How many miles can you ride for \$10.00?

Answers

Elementary Math Field Day – 2018 - ANSWER SHEET

5th Grade CC Standards

First Name _____ Last Name _____ School _____

1) 35,200

2) odd

3) 82

4) 3

5) A B C D

6) 77

7) 11.777

8) 55

9) 13 pounds

10) $\frac{11}{25}$

11) 106

12) 257

13) 4

14) 222

15) 144 sq. in.

16) 720 cu. cm

17) 81 degrees

18) 144 degrees

19) A B C D

20) $\frac{5}{12}$

21) 5

22) Mean

23) 12

24) \$ 67,200

25) \$ 264

26) \$ 40

27) 102 km

28) 8

29) 3

30) \$ 600

Tie-Breakers (to be used in case of ties)

A) 58 B) $\frac{11}{30}$ C) 10 D) 225 sq. cm E) 6

Answers

Elementary Math Field Day – 2018 - ANSWER SHEET

4th Grade CC Standards

First Name _____ Last Name _____ School _____

1) 10,800

2) 15

3) 36

4) 2

5) A B C D E

6) 28

7) 1881

8) 2.078

9) 6840

10) 81 yards

11) 315

12) 3

13) 368

X before
+
PEMDAS

15) 132

16) 123

17) 144 sq. in

18) 186 sq. ft.

19) A B C D

20) $\frac{1}{12}$

21) 3

22) Mean

23) 10

24) \$ 4500

25) 45

26) \$ 6.55

27) $\frac{1}{2}$ min.

28) \$ 14

29) 336

30) 28

Tie-Breakers (to be used in case of ties)

A) 196 B) Tues. C) 22 D) 46 E) 172 cm

Answers

Brain Teasers – 2018 – 4th Grade

ANSWER SHEET

First Name _____ Last Name _____ School _____

1) 25 weeks

2) 49

3) 68

4) 8

5) 182

6) 5

7) 8

8) \$ 140 WRITTEN EXPLANATION $1 \text{ meal} = 2.50 \times 7 = 17.50$
 $8 \text{ meals} = 17.50 \times 8 = \140

9) Mean and 20 pounds WRITTEN EXPLANATION

Mean = 26
(Average) $26 - 6 = 20$ Mode

5 5 6 8 10 6
Median

10) 92 WRITTEN EXPLANATION

97 91 92 100

$95 \times 4 = 380$
 $380 - (97 + 91) =$
192

Answers

Brain Teasers – 2018 – 5th Grade

ANSWER SHEET

First Name _____ Last Name _____ School _____

1) 32

2) 34 cm

3) 125

4) 8671

5) 34

6) 12 hours

7) 88 square inches

8) \$ 140 WRITTEN EXPLANATION

Judy's meal price $7 \times 2.50 = 17.50$

Meal = 17.50 $17.50 \times 8 = \$140$

9) \$ 2.50 WRITTEN EXPLANATION

$2.50 \times 5 = 12.50$ of course, $20\% = \frac{1}{5}$
 $\$10 = 12.50 - 2.50$ $\frac{1}{5} \times 12.50 = 2.50$

10) 3.3 miles WRITTEN EXPLANATION

or $3 \frac{3}{10}$

1 mile = \$2.00
(10 x .20)

$2.40 + 2.00 = 4.40$
 $\frac{1}{2}$ mile + tip

$10 - 4.40 = 5.60$

$5.60 = 2.00 + 2.00 + 1.60$

1 mile 1 mile $1.60 = \frac{160}{100} = \frac{4}{5}$ mile

$2.40 = \frac{1}{2}$ mile

$\frac{4}{5} + \frac{1}{2} = \frac{13}{10} = 1.3$

$2 + 1.3 = 3.3$

