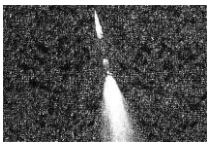

Thirty-Third Annual Sixth Grade Math Blast

Stage One

Directions:

1. Use a #2 pencil.
2. Scratch paper may be used. You may write on this test.
3. Put your NAME and SCHOOL on the Scantron answer sheet
4. Transfer answers to Scantron carefully; be sure to make marks dark and erasures clean.
5. There is no penalty for guessing.
6. All fractions are to be simplified.
7. Use 3.14 for π.
8. All money should be rounded to the nearest penny.

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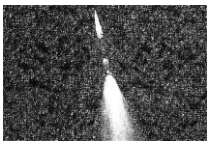
1. Find the number of minutes in 4 ½ days.
   a. 108 *minutes*
   b. 1440 *minutes*
   c. 5760 *minutes*
   d. 6480 *minutes*
   e. None of These

2. The ratio of 6ht graders to 7th graders in a math club is 5:4. The ratio of 8th graders to 7th graders in the same club is 3:2. If there are 18 8th graders in the club, how many 6th graders are there in the club?
   a. 15
   b. 20
   c. 25
   d. 30
   e. None of These

3. A certain job can be completed by 5 women in 3 hours. At that rate, how long would it take 2 women to do the same job?
   a. 1 1/5 hours
   b. 7 ½ hours
   c. 5 hours
   d. 15 hours
   e. None of These

4. A family pays their 9 year old son an allowance of $5. If they want to keep the same age to allowance ratio, what allowance should they give their 8 year old son?
   a. $4.44
   b. $4. 90
   c. $5.20
   d. $3.78
   e. None of These



5. Ellen is going to drive from New York City to Los Angeles. She looks at a map and finds the two cities are 6.5" apart. If the scale on the map is 1" = 460 miles, how many miles will Ellen's trip be?

   a. 29900 miles
   b. 2990 miles
   c. 299 miles
   d. 29.9 miles
   e. None of These

6. Decide which equation is true.

   a. $2^4 = 2 \cdot 4$
   b. $3 + 3 + 3 + 3 + 3 = 3^5$
   c. $5^3 = 5 \bullet 5 \bullet 5$
   d.

7. A driving gear turns at 100 rpm with 48 teeth. The driven gear turns at 75 rpm with 64 teeth.

   Simplify: $\dfrac{1-\frac{1}{3}}{1+\frac{1}{2}}$

   a. $\frac{1}{4}$
   b. 1
   c. $\frac{3}{4}$
   d. $\frac{4}{9}$
   e. None of These

8. Express the decimal sum as a simplified fraction.
   $0.105 + 0.5 + 0.35$

   a. $\frac{145}{1000}$
   b. $\frac{29}{200}$
   c. $\frac{955}{1000}$
   d. $\frac{191}{200}$
   e. None of These

9. Katy Perry made four purchases. She purchased 5 pairs of shoes at $34 each; 6 handbags at $72.40 each; 9 bottles of hairspray for $3.57 each; and 12 packages of gum for $1.13 each. How much did she spend?

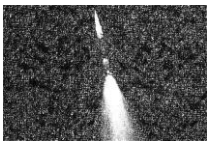
   a. $481.79
   b. $4559.69
   c. $650.09
   d. $6500.45
   e. None of These

10. What is the largest 3-digit number that can be obtained from 9412805 by crossing out 4 digits? Keep the digits in their original order.

   a. 985
   b. 958
   c. 948
   d. 982
   e. None of These

11. $\sqrt{3^2 + 4^2 + 5^2}$?

   a. 5
   b. $2\sqrt{5}$
   c. $5\sqrt{2}$



d. 50

e. None of These

12. How many numbers are equal to their reciprocals?

a. 1

b. 2

c. 3

d. 0

e. None of These

13. Evaluate $-1^{20} + (-1)^{20}$

a. -2

b. -1

c. 0

d. 2

e. None of These

14. What is the result when the largest in the set $\left\{\frac{3}{5}, \frac{4}{7}, \frac{2}{3}, 8, 0.4\right\}$ is divided by the smallest number in the set?

a. 12

b. $13\frac{1}{3}$

c. 14

d. 20

e. None of These

15. Half of a third of a number is 324. What is the number?

a. 54

b. 648

c. 972

d. 1944

e. None of These

16. The average of Karen's first three tests is 90 points. The average of her next two tests is 95 points. What is her overall average?

a. 91 points

b. 92 points

c. 92.5 points

d. 93 points

e. None of These

17. How many ways can United States coins be used to total 31 cents?

a. 11

b. 13

c. 15

d. 17

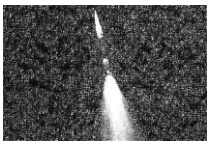
e. None of These

18. $\frac{x}{3} + \frac{x}{4} = 7$ What is x?

a. $\frac{1}{12}$

b. $\frac{7}{12}$

c. $\frac{12}{7}$



d. 12

e. None of These

19. A new rectangle is formed by taking the length of a rectangle and increasing its length by 20% and by decreasing its width by 20%. How does the area of the new rectangle compare to the area of the original rectangle?

a. 96% of the original rectangle

b. The same size as the original rectangle

c. 4% larger than the original rectangle

d. There is not enough information to decide

e. None of These

20. Stash is standing on the 9th rung of a ladder. He goes up 6 rungs, down 2 rungs, up 3 rungs and down 9 rungs. He then goes up 11 rungs and ends up at the top rung. How many rungs are on the ladder?

a. 18

b. 16

c. 14

d. 12

e. None of These

21. Compute: $1.354 + 0.79 + 2.005 + 1.8 + 4.05 + 0.001$?

a. 3.862

b. 10

c. 8.20191

d. 9.78

e. None of These

22. Compute: 11^4.

a. 121

b. 14641

c. 44

d. 484

e. None of These

23. Compute: $\frac{999999}{333333}$

a. 3

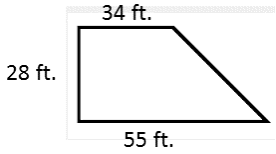
b. 33

c. 3333

d. 333333

e. None of These

24. A fence that cost \$2.50 per foot is built around the plot shown below. How much did it cost to fence the plot?



a. \$432.50

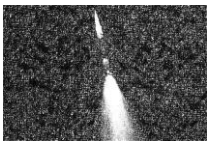
b. \$380

c. \$345

d. \$292.50

e. None of These

25. Seth spent $\frac{3}{5}$ of his salary and had \$2733 left. What was his salary?



a. $1639.80

b. $13,665

c. $4555

d. $6750

e. None of These

26. How many even numbers are between 11 and 99?

a. 43

b. 44

c. 45

d. 88

e. None of These

27. A sequence is formed using the following rule: If number, N, is divisible by 3, then the next number in the sequence is N/3, otherwise the next number is N+7. If the first four terms of a sequence are 30; 10; 17; 24; …, what is the 10th term?

a. 1

b. 5

c. 8

d. 11

e. None of These

28. The circumference of a circle is 20cm. Rounded to the nearest tenth of a square centimeter, what is the area of the circle?

a. 15.9

b. 18.8

c. 27.2

d. 31.8

e. None of These

29. (333 + 333 + 333 + 333) + (222 + 222 + 222 + 222) = 555 ×___?

a. 1

b. 4

c. 7

d. 8

e. None of These

30. Which of the numbers below is between $\frac{1}{2}$ and $\frac{3}{4}$?

a. 0.2

b. 0.4

c. 0.6

d. 0.8

e. None of These

31. What is the smallest prime factor of 221?

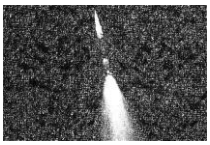
a. 1

b. 3

c. 5

d. 7

e. None of These



32. $\frac{1}{3}+\frac{10}{3}+\frac{100}{3}=$

a. 10

b. 11

c. 33

d. 37

e. None of These

33. The average of 11, 12, 13, 14, 15, 16, 17, 18, and 19 is

a. 15

b. 16

c. 19

d. 135

e. None of These

34. What is $\frac{4}{7}$ of $\frac{7}{8}$ of 7?

a. $\frac{3}{2}$

b. $\frac{7}{2}$

c. $\frac{1}{2}$

d. $\frac{5}{2}$

e. None of These

35. The total number of minutes in two weeks is

a. 20,160

b. 10,080

c. 1440

d. 336

e. None of These

36. What is the distance a car can travel at 54 mph in 3 hours and 20 minutes?

a. 180

b. $117\frac{1}{2}$

c. 162

d. 182

e. None of These

37. What are all the whole number divisors of 60?

a. 1,2,3,4,5,6,10,12,15,20,30,60

b. 3,4,5,6,10

c. 2,3,5

d. 1,2,3,5

e. None of These

38. The average of 4 tests is 73. Three of the scores are: 54, 68, and 93. What is the 4th score?

a. 83

b. 90

c. 65

d. 77

e. None of These

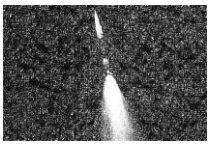
39. If 24 machines can process 3840 cards in 1 hour, how many are needed to process 4800 cards in an hour?

a. 30

b. 40

c. 200

d. 28



e. None of These

40. Nathan is 14 pounds heavier than Sue. Together they weigh 192 pounds. How much does Nathan weigh?

a. 89 pounds

b. 96 pounds

c. 100 pounds

d. 103 pounds

e. None of These

41. What is the sum of the first 20 counting numbers?

a. 105

b. 210

c. 220

d. 231

e. None of These

42. Round $943.50 to the nearest hundred dollars.

a. $1000

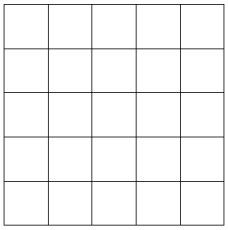
b. $900

c. $950

d. $940

e. None of These

43. The area of each small square is 25 sq. cm. What is the perimeter of the large square?



a. 625 cm

b. 125 cm

c. 100 cm

d. 25 cm

e. None of These

44. If the sales tax rate is 7.25%, how much tax must be paid on a pair of jeans that cost $18.95?

a. $1.37

b. $1.36

c. $1.38

d. $1.39

e. None of These

45. Solve: (3 hours, 42 minutes, 12 seconds) – (1 hour, 51 minutes, 37 seconds)?

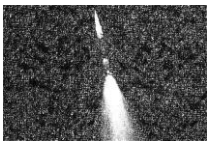
a. 2 hrs, 8 mins, 23 sec.

b. 4 hrs, 8 mins, 23 sec.

c. 1 hr, 51 mins, 37 sec.

d. 1 hr., 10 mins, 37 sec.

e. None of These



46. What is the decimal numeral for MCMXCIX?

a. 1911

b. 1993

c. 1919

d. 1999

e. None of These

47. What is the least common multiple of 42 and 70?

a. 2940

b. 210

c. 7

d. 70

e. None of These

48. What is the surface area of a cube whose side lengths are 4 inches?

a. 64 sq. in.

b. 96 sq. in.

c. 48 sq. in.

d. 80 sq. in.

e. None of These

49. 0.019=

a. .019%

b. 0.19%

c. 1.9%

d. 19%

e. None of These

50. Which of the following numbers is not divisible by 2^2

a. 531

b. 540

c. 452

d. 360

e. None of These

51. All of the following are prime numbers EXCEPT:

a. 13

b. 93

c. 29

d. 61

e. All of These are Prime Numbers

52. $\dfrac{1}{1+\dfrac{1}{1+\frac{1}{2}}} =$

a. $\frac{3}{5}$

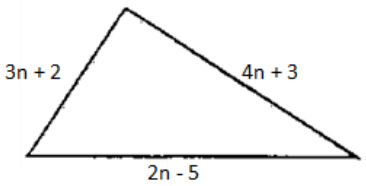
b. $\frac{5}{3}$

c. $1\frac{3}{3}$

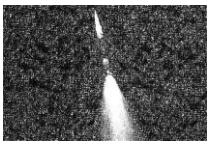
d. $\frac{1}{5}$

e. None of These

53. What is the perimeter of the triangle?



a. 0



b. $1\frac{1}{9}$

c. 9n

d. 9

e. None of These

54. Simplify: $3^2 + 3^2 \times 3^2 + 3^2 \times 3^2 + 3^2$

a. 180

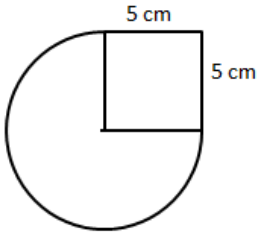
b. 324

c. 1476

d. 1548

e. None of These

55. What is the area of the following figure?



a. 100 sq. cm

b. 103.5 sq. cm

c. 78.5 sq. cm

d. 83.875 sq. cm

e. None of These