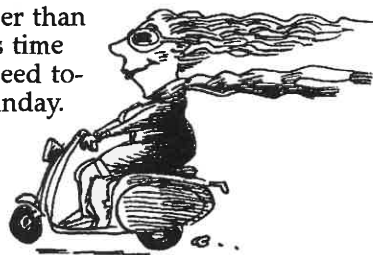


30. If a certain two-digit number is equal to twice the sum of its digits, what is the sum of its digits?
A) 9 B) 12 C) 18 D) 36
31. The *distance* between steps on a ladder is measured from the top of a step to the bottom of a higher step. If the distance between adjacent steps of my ladder is 25 cm, and each step is 2 cm thick, what is the distance between step 1 and step 7?
A) 135 cm B) 137 cm C) 160 cm D) 162 cm
32. If the average of three *different* positive integers is 3, their least possible product is
A) 9 B) 12 C) 24 D) 27
33. If $*abcd* = a \times d + b \times c$, then $*2543* =$
A) 14 B) 22 C) 26 D) 120
34. If the sum of two positive integers is divided by their difference, a possible value of the quotient is
A) 0 B) 0.5 C) 1 D) 2
35. (# of minutes in a second) \div (# of seconds in a minute) is
A) 3600 B) 60 C) 1 D) less than 1
36. The number $\frac{1}{111}$ is ? % of the number 111 (to the nearest 0.001%).
A) 0.008% B) 0.009% C) 0.901% D) 1.000%
37. $\sqrt{9^{16}} =$ A) 3^2 B) 9^2 C) 9^4 D) 9^8
38. Today, Grandma rode 20% further than she rode on Sunday, in 20% less time than Sunday's ride took. Her speed today was ? % of her speed on Sunday.
A) 140 B) 150 C) 160 D) 170
39. Grandma is 100. Her age in months contained two more digits than her age in years during all or part of ? of those 100 years.
A) 16 B) 17 C) 18 D) 19
40. What is the difference between the sum of the first 2004 positive integers and the sum of the next 2004 positive integers?
A) 2004 B) 4008 C) 2004^2 D) 4008^2



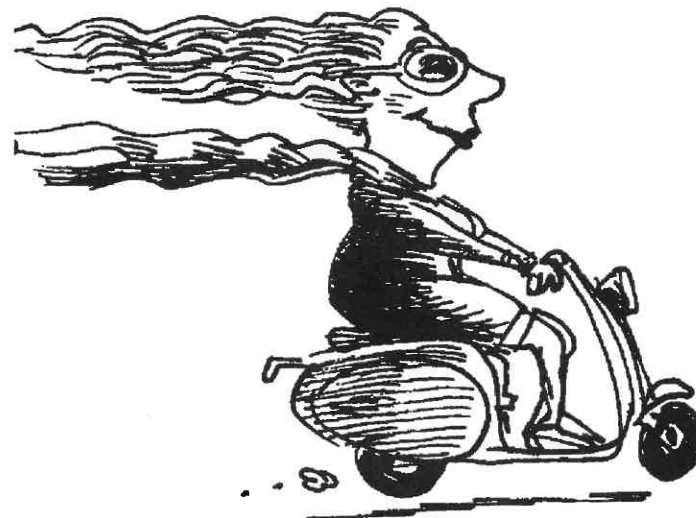
2003-2004 Annual 8th Grade Contest

Tuesday, February 17 or 24, 2004

8

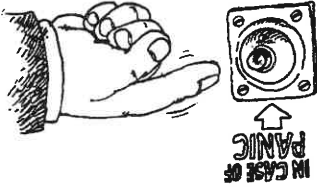
Instructions

- **Time** You will have only 30 minutes working time for this contest. You might be *unable* to finish all 40 questions in the time allowed.
- **Scores** Please remember that *this is a contest, not a test*—and there is no “passing” or “failing” score. Few students score as high as 30 points (75% correct). Students with half that, 15 points, *should be commended!*
- **Format and Point Value** This is a multiple-choice contest. Each answer is an A, B, C, or D. Write each answer in the *Answers* column to the right of each question. A correct answer is worth 1 point. Unanswered questions get no credit. You **may** use a calculator.



The end of the contest **8**

1. $(99-98) \times (88-87) \times (77-76) \times (66-65) =$
 A) 0 B) 1 C) 4 D) 11
2. $1^2 + (-1)^2 - 1^2 =$
 A) 1 B) -1 C) 0 D) 3
3. The base of my panic button is a square with an even perimeter. It can't have a side of length
 A) 0.50 B) 0.75 C) 1.00 D) 1.50
4. $21+28+35+42+49+56+63 = 7 \times \frac{1}{2}$
 A) 7 B) 14 C) 42 D) 49
5. $\frac{3}{5} = \frac{16}{?}$
 A) 4 B) 3 C) $\frac{4}{1}$ D) 25%
6. Which type of triangle has the largest angle?
 A) equilateral B) acute C) obtuse D) right
7. A CD costs 30 quarters, 30 dimes, 30 nickels, and 30 pennies. If I pay with 30 half-dollars, I will have overpaid by
 A) \$2.30 B) \$2.70 C) \$3.00 D) \$3.20
8. If I have \$39.99, I can buy at most $\frac{1}{2}$ 39¢ trinkets.
 A) 100 B) 101 C) 102 D) 103
9. What is the tens' digit of the product 8765×4321 ?
 A) 5 B) 6 C) 7 D) 8
10. How many grains of rice are in 1 kg of my famous rice if the average weight of 1 grain of my rice is 0.01 g?
 A) 100 B) 1000 C) 10000 D) 100000
11. $120 \div 2 = 180 \div 3 = 240 \div 4 = 360 \div \frac{1}{2}$
 A) 5 B) 6 C) 8 D) 12
12. The additive inverse of $\frac{7}{1}$ is a $\frac{1}{2}$ number.
 A) negative B) whole C) prime D) positive
13. Kay has an ice cream sundae every Sunday in May. If May 1 is a Saturday, then exactly how many sundaes will Kay have in May?
 A) 2 B) 3 C) 4 D) 5
14. The sum of two odd numbers cannot equal
 A) 124 B) 142 C) 214 D) 241
15. If twice a certain number is 96, then one-third of the number is
 A) 16 B) 32 C) 48 D) 64



16. Of the following, which pair has the greatest common factor?
 A) 33, 90 B) 36, 63 C) 66, 96 D) 99, 39
17. If each of 5 numbers is increased by 10% of its value, then the sum of the 5 numbers is increased by $\frac{1}{2}$ % of its value.
 A) 1 B) 2 C) 10 D) 50
18. At 2 PM I'll begin to draw 32 3-minute pencil sketches. I'll rest 2 minutes between sketches, so I'll finish the sketches at $\frac{1}{2}$ PM.
 A) 4:37 B) 4:38 C) 4:39 D) 4:40
19. 3 minutes = $\frac{1}{2}$ % of 90 minutes.
 A) $\frac{3}{1}$ B) $\frac{2}{1}$ C) $\frac{3}{10}$ D) 5
20. $(100 + 88) \times (100 - 88) =$
 A) 0 B) 100^2 C) 2×8800 D) $100^2 - 88^2$
21. In 30 years, my current age will triple. How old am I now?
 A) 15 B) 12 C) 10 D) 9
22. What is the smallest positive integer that is a multiple of $\frac{57}{38}$?
 A) 2 B) 19 C) 38 D) 57
23. Of the following numbers, which has the greatest value?
 A) 1^{25} B) 25% C) $\frac{1}{25}$ D) 2.5
24. If $AB + BC = 18$, then the perimeter of $\triangle ABC$ cannot equal
 A) 33 B) 34 C) 35 D) 36
25. You add 100 different positive integers. I add 99 of these 100. The least possible difference between your sum and mine is
 A) 0 B) 1 C) 99 D) 100
26. A ball with a 5 m circumference needs $\frac{1}{2}$ turns to roll 1 km in a straight line.
 A) 400 B) 314 C) 200 D) 100
27. The square root of the square root of $\frac{1}{2}$ is 4.
 A) 4^2 B) 4^3 C) 4^4 D) 4^8
28. Which equals the reciprocal of the product $\frac{3}{2} \times \frac{6}{5}$?
 A) $\frac{3}{2} \times \frac{6}{5}$ B) $\frac{3}{2} \times \frac{5}{6}$ C) $\frac{2}{3} \times \frac{6}{5}$ D) $\frac{2}{3} \times \frac{5}{6}$
29. The least possible sum of 5 different positive multiples of 6 is
 A) 60 B) 90 C) 130 D) 160

