

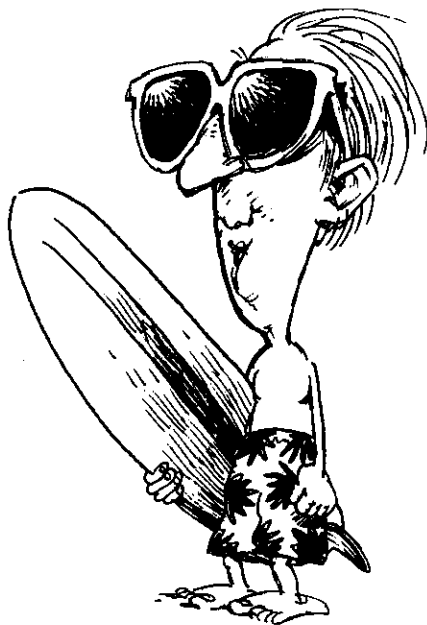
1977-78 Annual 8th Grade Contest

Tuesday, February 14, 1978

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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. Every answer is an A, B, C, or D. For each question, write your answer in the *Answers* column to the right of the question. A correct answer is worth 1 point. Unanswered questions get no credit.




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1. 32% is the same as A) 32 B) $3\frac{1}{8}$ C) $\frac{8}{25}$ D) none of these	1.
2. 217 is divisible by A) 3 B) 9 C) 11 D) none of these	2.
3. The intersection of the sets {1, 3, 5, 7} and {1, 2, 3} is A) {1, 2, 3, 5, 7} B) {1} C) \emptyset D) none of these	3.
4. An isosceles right triangle has an angle whose measure is A) 45° B) 60° C) 180° D) none of these	4.
5. $2^4 \times 5^4 =$ A) 320 B) 2000 C) 10000 D) none of these	5.
6. What percent of 44 is 55? A) 125% B) 120% C) 80% D) 75%	6.
7. The sum of two numbers is 10. Their product is at most A) 9 B) 10 C) 25 D) none of these	7.
8. The perimeter of a square is 32. The area of this square is A) 16 B) 32 C) 64 D) none of these	8.
9. To the nearest tenth, $7.63 + 9.32 =$ A) 16.9 B) 17.0 C) 17.9 D) none of these	9.
10. Of 1, 11, 21, 31, 41, and 51, how many are primes? A) 3 B) 4 C) 5 D) none of these	10.
11. If d is the length of a circle's diameter, the circle's area is A) $\frac{\pi d^2}{4}$ B) $\frac{\pi d^2}{2}$ C) πd^2 D) $2\pi d$	11.
12. The smallest prime number greater than 90 is A) 91 B) 93 C) 97 D) none of these	12.
13. Every integer is A) irrational B) real C) positive D) non-negative	13.
14. $(6 \times 10^4) + (5 \times 10^2) + (3 \times 10^1) =$ A) 653 B) 6053 C) 356 D) none of these	14.
15. Of the numbers 2, 3, 4, and 5, which is (are) the only one(s) which satisfy the inequality $3x - 1 < 11$? A) 2 B) 2, 3, and 4 C) 5 D) none of these	15.

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16. When $4\frac{1}{6}$ is divided by $1\frac{2}{3}$, the quotient is A) $2\frac{1}{2}$ B) $\frac{2}{5}$ C) $2\frac{1}{5}$ D) none of these	16.
17. The number 5 is the <i>only</i> solution to I. $x + 15 = 20$ II. $5x \neq 14$ A) I, not II B) II, not I C) I and II D) none of these	17.
18. $8 \div 2 \times 4 =$ A) 64 B) 16 C) 4 D) 1	18.
19. The perfect squares, 1, 4, 9, 16, 25, . . . , are closed under A) addition B) multiplication C) square-rooting D) none of these	19.
20. In the base six numeral 3254, the digit 2 represents the number A) 36 B) 72 C) 200 D) 216	20.
21. If $a < 10$ and $b < 5$, it <i>must</i> be true that A) $a > b$ B) $a - b = 5$ C) $a = 2b$ D) $a + b < 20$	21.
22. If p is the smallest prime factor of 511, then A) $18 \leq p \leq 23$ B) $10 \leq p \leq 17$ C) $3 \leq p \leq 9$ D) none of these	22.
23. Find the ratio of 9.6 to 8. A) 6:5 B) 12:1 C) 1:12 D) none of these	23.
24. If $a \S b$ means $\frac{a+b}{a \times b}$, find the value of $5 \S (3 \S 4)$. A) $1\frac{22}{35}$ B) $2\frac{11}{12}$ C) $5\frac{7}{12}$ D) none of these	24.
25. An example of a <i>false</i> inequality is A) $\frac{2}{9} > \frac{1}{5}$ B) $\frac{5}{7} < \frac{8}{9}$ C) $\frac{2}{7} > \frac{1}{4}$ D) none of these	25.
26. The number 56 is $87\frac{1}{2}\%$ of A) 35 B) 49 C) 64 D) none of these	26.
27. In a right triangle, if the lengths of the legs are 10 and 24, the length of the hypotenuse is A) 17 B) 26 C) 34 D) 38	27.
28. If N is an even number, which of the following is <i>always</i> odd? A) $\frac{N}{2} + 1$ B) $\frac{N}{2} + 2$ C) $\frac{N}{2} + 3$ D) none of these	28.
29. If A and B are sets whose union is B , then it <i>must</i> be true that A) A is a subset of B B) $A = \emptyset$ C) $A = B$ D) none of these	29.

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30. The difference between a 2-digit number and the number with its digits reversed is <i>always</i> divisible by A) 2 B) 4 C) 6 D) none of these	30.
31. If $\frac{1}{3}$ of a number is N , then $\frac{5}{6}$ of the number is A) $1.2N$ B) $2.5N$ C) $3N$ D) none of these	31.
32. When expressed as a percent, $0.03\frac{1}{3}$ becomes A) $33\frac{1}{3}\%$ B) $3\frac{1}{3}\%$ C) $0.03\frac{1}{3}\%$ D) none of these	32.
33. The number 124150.5225 is the square of a number which has <u>?</u> non-zero digits to the right of its decimal point. A) 2 B) 3 C) 4 D) 5	33.
34. If a girl with an allowance of $\$X$ spends $\$Y$, the fractional part of her allowance that she did <i>not</i> spend is A) $\frac{X-Y}{X}$ B) $X - Y$ C) $\frac{Y}{X}$ D) none of these	34.
35. A man spent two-thirds of his money and misplaced two-thirds of the remainder, leaving him with $\$18$. With how much money did he start? A) $\$42$ B) $\$50$ C) $\$81$ D) none of these	35.
36. If 88 feet per second is the same as 60 miles per hour (mph), a plane flying at a speed of 1100 feet per second is traveling at A) 750 mph B) 740 mph C) 730 mph D) none of these	36.
37. An example of numbers written in <i>increasing</i> order is A) $\frac{11}{15}, \frac{13}{19}, \frac{13}{23}$ B) $\frac{13}{23}, \frac{13}{19}, \frac{11}{15}$ C) $\frac{13}{23}, \frac{11}{15}, \frac{13}{19}$ D) none of these	37.
38. If m and n are positive two-digit numbers, then, of the following fractions, the one with the largest value is A) $\frac{n}{m}$ B) $\frac{n+1}{m-1}$ C) $\frac{n-1}{m}$ D) $\frac{n}{m+1}$	38.
39. If $3N = 5$, then $1 =$ A) $\frac{5}{3}$ B) $\frac{3N}{5}$ C) 0.6 D) none of these	39.
40. At the rate of 4 pens for $C\epsilon$, how many pens can I buy for 40ϵ ? A) $10C$ B) $\frac{10}{C}$ C) $\frac{160}{C}$ D) none of these	40.

The end of the contest  **8**

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