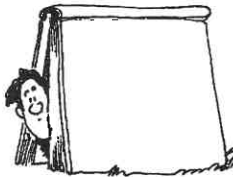


29. $\frac{3}{4} : 3 = \frac{4}{3} : ?$ A) $\frac{9}{4}$ B) $\frac{16}{3}$ C) 4 D) 12	29.
30. The product of a number and its additive inverse <i>never</i> equals A) 0 B) -1 C) 1 D) -4	30.
31. In 8 crow's nests, 15 crows nested either alone or paired with only one other crow. How many of the 15 crows nested alone? A) 0 B) 1 C) 2 D) 3	31.
32. What is the smallest possible difference between the sum of five consecutive positive integers and the largest of them? A) 0 B) 2 C) 5 D) 10	32.
33. $2^2 \times 2^4 = 2 \times ?$ A) $2^5$ B) $2^6$ C) $2^7$ D) $2^8$	33.
34. If I read 90 pages per hour, how many 270-page books can I read in 6 hours? A) 2 B) 3 C) 15 D) 18	34.
35. A <i>perfect square</i> is the product of any integer and itself. How many perfect squares are factors of $2 \times 4 \times 6 \times 8 \times 10$ ? A) 5 B) 4 C) 3 D) 2	35.
36. If the circumference of a circle is 4 cm, its area is $? \text{ cm}^2$ . A) $\frac{4}{\pi}$ B) $\frac{16}{\pi}$ C) $4\pi$ D) $16\pi$	36.
37. If two sides of a right triangle are 3 and 5, then the triangle's perimeter could be A) 10 B) 11 C) 12 D) 13	37.
38. If each face of a Jack-in-the-Box cube has a perimeter of 36, the cube's volume is A) 36 B) 81 C) 216 D) 729	38.
39. If $n$ is a whole number, which of the following could equal $n^3$ ? A) $2.7 \times 10^{27}$ B) $2.7 \times 10^{28}$ C) $2.7 \times 10^{29}$ D) $2.7 \times 10^{30}$	39.
40. Which of the following could possibly be the sum of all the integers in a set of 1000 consecutive positive integers? A) 499 000 B) 499 500 C) 500 000 D) 500 500	40.



## 2002-2003 Annual 8th Grade Contest

Tuesday, February 18 or 25, 2003

## Instructions

8

- **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

Visit our Web site at <http://www.mathleague.com>

Solutions on Page 99 • Answers on Page 144

15.	$\frac{3}{1} \times 9 \times \frac{1}{1} \times 6 \times \frac{9}{1} \times 3 =$ A) 9 B) 3 C) 1 D) $\frac{6}{1}$
16.	The sum of four numbers is one-half. Their average is A) one-eighth B) one-fourth C) one-half D) 2
17.	The front of my hat is an isosceles triangle, two of whose sides are 12 and 24. The triangle's perimeter is A) 36 B) 42 C) 60 D) 72
18.	Factor $6 \times 12 \times 18 \times 24$ into primes. A) $2^6 \times 3^6$ B) $2^7 \times 3^6$ C) $2^6 \times 3^5$ D) $2^7 \times 3^5$
19.	20% of 30 = 30% of $\frac{?}{?}$ A) 0.2 B) 20 C) 2% D) 200%
20.	Multiplying 7 by 0.25 gets the same result as dividing 7 by A) 0.25 B) 4 C) 25 D) 100
21.	Every $\frac{?}{?}$ number is divisible by at least one prime. A) whole B) odd C) even D) positive
22.	Ann is older than Bob and younger than Sue. If Dan is older than Ann, who could be the same age? A) Bob & Sue B) Dan & Bob C) Ann & Bob D) Sue & Dan
23.	The number $(0.1)^{10}$ is equal to A) 1 B) $\frac{10}{1}$ C) $\frac{100}{1}$ D) $\frac{10^{10}}{1}$
24.	A 139-minute movie starts at 8:30 PM. At what time will it end? A) 10:39 PM. B) 10:49 PM. C) 10:59 PM. D) 11:19 PM.
25.	$\frac{2^2}{2^2} + \frac{4^2}{4^2} = 2^2 + \frac{?}{?}$ A) $\frac{2^2}{1}$ B) 0 C) $2^2$ D) $4^2$
26.	$10\% = \frac{?}{?} \div 10$ A) 1 B) 10 C) 100 D) 10 000
27.	If 24 kittens weigh the same as 18 puppies, then 24 puppies weigh the same as $\frac{?}{?}$ kittens. A) 18 B) 24 C) 32 D) 36
28.	If I add the digits of my phone's extension num- ber, I get 28. That number can't have $\frac{?}{?}$ digits.



1.	Round 0.0409 to the nearest hundredth. A) 0.0401 B) 0.040 C) 0.041 D) 0.04
2.	The sum of 0.5 and its reciprocal is A) 0 B) 1 C) 2 D) 2.5
3.	I ate as many doughnuts as there are digits in the product $2\,000\,000 \times 5\,000\,000$ that are <i>not</i> 0. How many doughnuts did I eat? A) 1 B) 2 C) 7 D) 10
4.	Which is the only integer whose square is less than its double? A) 2 B) 1 C) 0 D) -2
5.	$25 \times (\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}) =$ A) 0.25 B) 1 C) 25 D) 100
6.	The largest odd factor of 210 is A) 21 B) 63 C) 105 D) 209
7.	$(111 - 11) \times (111 - 11) = 100 \times \frac{?}{?}$ A) 10 B) 11 C) 100 D) 1000
8.	Asked on Tues, "Did you saw your wife?" a magician said, "Yes, I did so 31 days ago, on a Thurs. B) Fri. C) Sat. D) Sun.
9.	Which of the following is less than $0.12 \times 0.34$ ? A) $0.12 - 0.34$ B) $0.12 + 0.34$ C) 0.1234 D) $12 \times 34$
10.	$7 + 8 \times 7 + 8 =$ A) $(7+8) \times 7 + 8$ B) $7 + (8 \times 7) + 8$ C) $7 + 8 \times (7+8)$ D) $(7+8) \times (7+8)$
11.	A right triangle can have at most $\frac{?}{?}$ of length 5. A) 3 sides B) 2 sides C) 1 side D) 0 sides
12.	Under the couch, I found 100 dollars + 100 quarters + 100 dimes + 100 nickels. I found a total of A) \$140 B) \$145 C) \$175 D) \$400
13.	$121\,212\,121\,212 \div 3 = 363\,636\,363\,636 \div \frac{?}{?}$ A) 1 B) 6 C) 9 D) 27
14.	All of the following equal one-half <i>except</i> A) $(\frac{4}{4})^2$ B) $\frac{120}{60}$ C) 0.5 D) $\sqrt{\frac{4}{4}}$

