

22. Use trial & error. Double each choice to try to get my original #. For A, half my # is 3, my # is 6, twice it is 12. The product is 72.

- A) 3 B) 6 C) 12 D) 36

Incredible!

23. If Mary got all 100s, her average would have been 100. Since 98 is just a little less than 100, try four 100s and one 90. Finally, $(400+90) \div 5 = 98$, as required.

- A) 1 B) 2 C) 3 D) 4



24. Since 121 is divisible by 11, the remainder is 006, or 6.

- A) 6 B) 5 C) 4 D) 3

25. The g.c.d. of 6, 16, & 26 is 2, so the g.c.d. of 60, 160, & 260 is 20.

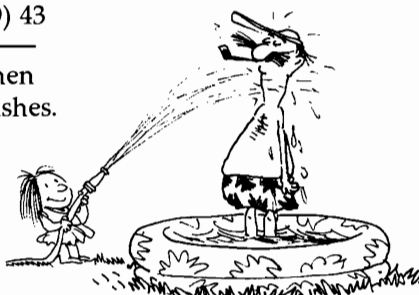
- A) 5 B) 6 C) 20 D) 60

26. The middle # is $2005 \div 5 = 401$. The sum of the digits of the 5 #s is $(3+9+9)+(4+0+0)+(4+0+1)+(4+0+2)+(4+0+3) = 43$.

- A) 15 B) 25 C) 34 D) 43

27. If 2 splashes = 3 splishes, then (9×2) splashes = (9×3) splishes.

- A) 12 B) 27 C) 36 D) 48



28. The smallest such number is 6, and the largest such number is 95. There are 90 whole numbers from 6 through 95.

- A) 89 B) 90 C) 91 D) 100

29. The l.c.m. of 6 & 9 is 18. The 5 numbers are 18, 36, 54, 72, & 90.

- A) 2 B) 3 C) 4 D) 5

30. $1+3+\dots+99 = (2-1)+(4-1)+\dots+(100-1) = 2550-50 = 2500$.

- A) 2400 B) 2450 C) 2500 D) 2550

22. A

23. A

24. A

25. C

26. D

27. B

28. B

29. D

30. C

The end of the contest **5**

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

Spring, 2005

Directions for Grading

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- **Date** You may give this contest anytime after April 15. The *5th Grade Contest* is for use in your own school or district. We've enclosed a registration form for next year. Since results are *not* used for interschool comparisons, **we do not enclose a score report form**.
- **Urgent questions?** Call 1-201-568-6328.
- **Scores** Remind students that *this is a contest, not a test*—and there is no “passing” or “failing” score. Few students score as high as 24 points (80% correct); students with half that, 12 points, *should be commended!*
- **Solutions** Detailed solutions appear in each question box, and letter answers are in the *Answers* columns on the right. You may copy this solution key and give a copy to every student who took this contest.
- **Awards** The original contest package contained 1 book award (and a bookplate you should affix to the book's inside front cover) for the 1st place student. We also enclosed 5 *Certificates of Merit*—1 each for the runner-up on each grade level, plus extras for ties.
- **Additional Book Awards & Additional Certificates** If you want to give more than 1 book award, you may purchase additional books as described below. Do you need more Certificates of Merit? If so, send your name, school, and school mailing address to our mailer at: **Math Certificates, P.O. Box 17, Tenafly, NJ 07670-0017**, and include a self-addressed, stamped envelope (2 stamps required) large enough to hold certificates.

The school's top scorer will receive the book *Math Contests—Grades 4,5,6 (Vol. 3)*. Other high scorers receive Certificates of Merit. In any one school year, no student may win both a book and a certificate. The book and certificates were in the original contest package. Special “bumper sticker” awards are included for high scoring students.

If needed, duplicate book awards may be ordered as described below.

Fifteen books of past contests, *Grades 4, 5, & 6 (Vols. 1, 2, 3, 4, 5)*, *Grades 7 & 8 (Vols. 1, 2, 3, 4, 5)*, and *High School (Vols. 1, 2, 3, 4, 5)*, are available, for \$12.95 per volume (\$15.95 Canadian), from Math League Press, P.O. Box 17, Tenafly, N.J. 07670-0017.

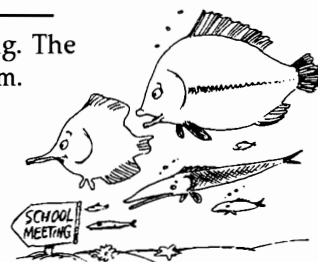
2004-2005 5TH GRADE CONTEST SOLUTIONS

Answers

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1. $(100+100)+(200+100)+(300+100) = 100+200+300+300$. A) 100 B) 200 C) 300 D) 400 | 1. C |
| 2. Two-dozen truckloads of dirt = $2 \times 12 = 24$ truckloads. Two fewer than that is $24 - 2 = 22$ truckloads. A) 10 B) 12 C) 20 D) 22 | 2. D |
| 3. $27 \div 3 = 9$, and $9 = 3 \times 3$. A) 3 B) 6 C) 9 D) 27 | 3. A |
| 4. For each coin that lands tails up, two land heads up. Make a list. Look for a sum of 9: $1t, 2h$; $2t, 4h$; $3t, 6h$. Finally, $3+6 = 9$. A) 3 B) 4 C) 5 D) 6 | 4. D |
| 5. $19 \text{ tens} - 19 \text{ ones} = (19 \times 10) - (19 \times 1) = 190 - 19 = 171$. A) 1871 B) 342 C) 171 D) 9 | 5. C |
| 6. $4 \times 8 \times 12 = 4 \times (4 \times 2) \times 12 = (4 \times 4) \times (2 \times 12) = 16 \times 24$. A) 32 B) 24 C) 20 D) 16 | 6. B |
| 7. My neck, which grows 5 cm in 10 days, grows $10 \times 5 = 50$ cm in $10 \times 10 = 100$ days. A) 5 B) 10 C) 25 D) 100 | 7. D |
| 8. $(33+44+55+66) \div 11 = 3+4+5+6 = 18$. A) 18 B) 11 C) 9 D) 7 | 8. A |
| 9. Even numbers divisible by 3 are divisible by 6. A) 166 B) 266 C) 366 D) 466 | 9. C |
| 10. Pete got \$3.60 in change, so 4 frozen pizzas cost Pete $\$20.00 - \$3.60 = \$16.40$. One frozen pizza cost Pete $\$16.40 \div 4 = \4.10 . A) \$4.10 B) \$5 C) \$6.25 D) \$9 | 10. A |
| 11. $(48 \times 2) + (48 \times 3) + (48 \times 4) = 48 \times (2 + 3 + 4) = 48 \times 9$. A) 24 B) 9 C) 5 D) 3 | 11. B |



What's up?



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2004-2005 5TH GRADE CONTEST SOLUTIONS

Answers

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 12. The ratio $(4 \text{ side-lengths}) \div (2 \text{ side-lengths}) = 4 \div 2 = 2$. A) 1 B) 2 C) 4 D) 8 | 12. B |
| 13. Four years ago, Tom was 8. Six years ago, he was 6. The average of 8 and 6 is 7. A) 11 B) 7 C) 5 D) 4 | 13. B |
| 14. 12 hours before noon is 12 midnight. 12 minutes before 12 midnight is 11:48 P.M. I was wandering around at 11:48 P.M. A) 11:48 A.M. B) 12:12 A.M. C) 11:48 P.M. D) 12:12 P.M. | 14. C |
| 15. Two million = $2\,000\,000 = 2000 \times 1000$. A) 200×100 B) 200×1000 C) 2000×1000 D) $20\,000 \times 10$ | 15. C |
| 16. The <i>greatest</i> 3-digit number is 999, and the <i>greatest</i> 4-digit number is 9999. Their sum is $999 + 9999 = 10\,998$. A) 9998 B) 9999 C) 10 000 D) 10 998 | 16. D |
| 17. The ape ate 6 bananas daily. It ate $5 \times 6 = 30$ bananas in 5 days. A) 20 B) 24 C) 30 D) 120 | 17. C |
| 18. Every side of the triangle is 6 cm long. The triangle's perimeter is $6+6+6 = 18$ cm. A) 2 B) 6 C) 18 D) 36 | 18. C |
| 19. First 6 months take about $6 \times 30 = 180$ days, so day 199 falls in month 7, July. A) May B) June C) July D) August | 19. C |
| 20. When 728 is divided by 72, the remainder is 8. A) 7 B) 8 C) 28 D) 72 | 20. D |
| 21. The product 1111×1111 equals 1 234 321. The largest <i>odd</i> digit in this product is 3. A) 1 B) 3 C) 4 D) 5 | 21. B |

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