	Answers
30. Any number divisible by 6 and 8 is divisible by their lcm, 24, and all its factors, but not necessarily by any larger number. A) 1 B) 2 C) 3 D) 4	30. C
31. A diameter of the largest such circle is the length of one side of the square. The square's side is $8 \div 4 = 2$, so a radius is 1. A) 8 B) 4 C) 2 D) 1	31. D
32. A *pair* of \$5 and \$6 puzzles costs \$11. After I buy 8 pairs for \$88, I can buy 2 more \$6 puzzles. A) 17 B) 18 C) 19 D) 20	32. B
33. $\sqrt{36} \times \sqrt{36} = 6 \times 6 = 36$. A) 2×18 B) 18×18 C) 3×2 D) 36×36	33. A
34. If my row has 26 seats, then there are 25 seats besides mine. If 5 seats are on my left and 20 are on my right, the ratio is 5:20. A) 1:1 B) 1:2 C) 1:3 D) 1:4	34. D
35. Such products always have several factors divisible by 10, and the ones' digit of any number divisible by 10 is always a 0. A) 1 B) 5 C) 9 D) 10	35. A
36. Subtract 1 from each term. The resulting sum is $2550 - 50 = 2500$. A) 2500 B) 2475 C) 2450 D) 1275	36. A
37. Since 20% of 150 cm is 30 cm, and 150 cm + 30 cm is 180 cm, the Invisible Man's height without his hat on would be 180 cm − 30 cm = 150 cm. A) 144 B) 150 C) 160 D) 216	37. B
38. 5:00 to 5:59 is 60 times. At other times, 5s appear at 05, 15, 25, 35, 45, 50-59. Total # is $(60 \times 2) + (15 \times 22) = 450$. A) 362 B) 450 C) 472 D) 492	38. B
39. A square of area 64 has side 8. Split the square into an 8×5 rectangle and an 8×3 rectangle. The smaller rectangle's perimeter is $2 \times (3+8) = 22$. A) 20 B) 22 C) 24 D) 26	39. B
40. There are 16 △s: 6 small △s, 3 △s that use 2 small △s, 6 △s that use 3 small △s, and the original △. A) 16 B) 15 C) 13 D) 11	40. A

The end of the contest 6

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MATH

SIXTH GRADE MATHEMATICS CONTEST

Math League Press, P.O. Box 17, Tenafly, New Jersey 07670-0017

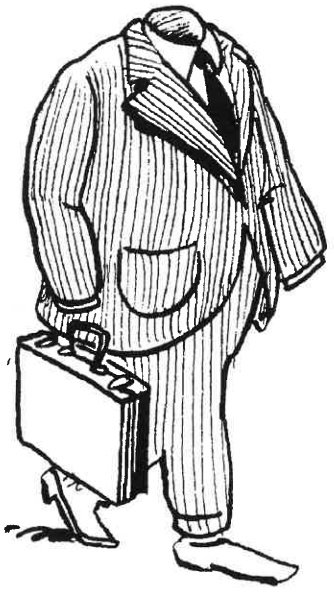
Information & Solutions

Tuesday, February 19 or 26, 2008

6

Contest Information

- **Solutions** Turn the page for detailed contest solutions (written in the question boxes) and letter answers (written in the *Answers* column to the right of each question).
- **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, *deserve commendation!*
- **Answers & Rating Scale** Turn to page 149 for the letter answers to each question and the rating scale for this contest.



1. Sam's age is 18. Sue's age is twice that. Her age is $2\times 18 = 36$.
A) 9 B) 27 C) 32 D) 36 — **1. D**

2. When 4 dozen people are paired off into couples, there are 2 dozen couples. The number of couples is $2\times 12 = 24$.
A) 12 B) 24 C) 48 D) 96 — **2. B**

3. 9:15 A.M. to 4:11 P.M. is 7 hrs. − 4 mins. Add half that, 3½ hrs. − 2 mins., to 9:15 A.M. to get 12:45 P.M. − 2 mins. = 12:43 P.M.
A) 12:43 B) 1:13 C) 1:33 D) 3:28 — **3. A**

4. The prime factors of $375 = 3\times 5^3$ are 3 and 5, and $5-1 = 4$.
A) 4 B) 24 C) 124 D) 374 — **4. A**

5. 43 days ago = 6 weeks + 1 day ago = the day before Tuesday.
A) Sunday B) Monday C) Wednesday D) Thursday — **5. B**

6. The average side-length of a triangle with perimeter 72 is $72\div 3$.
A) 3 B) 18 C) 24 D) 36 — **6. C**

7. $9898 \div 3 = 3299.\overline{3}$, and $0.\overline{3} = 1/3$, so choice A has remainder 1.
A) $9898 \div 3$ B) $9898 \div 4$ C) $9898 \div 6$ D) $9898 \div 7$ — **7. A**

8. Divide *both* numerator & denominator of $(20+30+40+50) \div 4$ by 2.
A) 1 B) 2 C) 4 D) 8 — **8. B**

9. The number 12 345 678 910 has 6 odd digits and 5 even digits.
A) 1:2 B) 2:3 C) 1:1 D) 6:5 — **9. D**

10. 7 isn't a factor of $23\times 24\times 25\times 26 = (23)\times(2^3\times 3)\times(5^2)\times(2\times 13)$.
A) 4 B) 5 C) 6 D) 7 — **10. D**

11. Salty spent 45¢. Peppy began with 45¢ more than Salty. To be left with the same amount of money as Sandy, Peppy must have spent 45¢ more than Salty spent, so Peppy must have spent 90¢.
A) 45¢ B) 55¢ C) 90¢ D) $1 — **11. C**

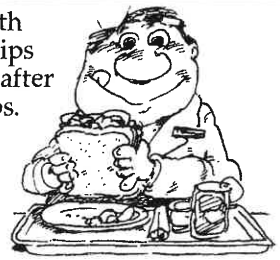
12. $3^2\times 6^2\times 9^2 = 9\times 6^2\times 9^2 = 6^2\times 9^3$.
A) $3^6\times 6^3$ B) $3^6\times 9^3$ C) $6^2\times 9^3$ D) $6^3\times 9^2$ — **12. C**

13. Cut the square into 36 1×1 squares. Each will have perimeter 4.
A) 4 B) 9 C) 18 D) 36 — **13. D**

14. First, 3:2 = 18:12. Of the choices listed, C is the closest to 18:12.
A) 13:12 B) 15:12 C) 19:12 D) 23:12 — **14. C**

15. $(1+2+2+3+3+3+4+4+4+4) \div 10 = 30 \div 10 = 3$.
A) 2 B) 3 C) 4 D) 5 — **15. B**

16. Ed began with 1 sip of milk. By his 20th sandwich bite, he had taken 10 more sips of milk. He took no more sips of milk after his 21st bite. Altogether, he took 11 sips.
A) 7 B) 8 C) 11 D) 12 — **16. C**



17. $(111\times 4) + (222\times 4) = (111+222)\times 4$.
A) 2 B) 3 C) 4 D) 6 — **17. C**

18. $(123\,123\,000\,000+123\,123)\div 123\,123 = 1\,000\,000+1 = 1\,000\,001$.
A) 1 000 001 B) 1 001 001 C) 1 010 101 D) 1 111 111 — **18. A**

19. The product of all the factors of 12 is $(1\times 12)\times(2\times 6)\times(3\times 4)$.
A) 12 B) 12×12 C) $6\times 8\times 12$ D) $12\times 12\times 12$ — **19. D**

20. My age doubles in $4+2 = 6$ years if I turn 12 in 2 years. I'm now 10.
A) 8 B) 10 C) 12 D) 14 — **20. B**

21. If the rectangle is a square, its area will be $5^2 = 25$.
A) 20 B) 25 C) 100 D) 400 — **21. B**

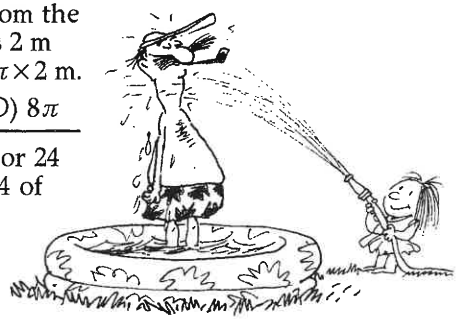
22. 8 sides + 6 sides + 5 sides = 19 sides.
A) 18 B) 19 C) 20 D) 21 — **22. B**

23. The gcf of $(3)\times(2\times 2)\times 5$ and $(13)\times(2\times 7)\times(3\times 5)$ is $2\times 3\times 5$.
A) $3\times 4\times 5$ B) $2\times 3\times 5$ C) 3×5 D) 5 — **23. B**

24. The products are shown below. Only $(3/2)\times 3 = 9/2 = (3/2) + 3$.
A) $\frac{2}{3}\times 3 = 2$ B) $\frac{3}{4}\times 3 = \frac{9}{4}$ C) $\frac{4}{3}\times 3 = 4$ D) $\frac{3}{2}\times 3 = \frac{9}{2}$ — **24. D**

25. $99\,990^2 \div 9999^2 = (9999\times 10)^2 \div 9999^2 = (9999^2\times 10^2) \div 9999^2 = 10^2$.
A) 1 B) 10 C) 100 D) 1000 — **25. C**

26. The pool's center is 2 m from the pool's wall, so its radius is 2 m and its circumference is $2\pi\times 2$ m.
A) π B) 2π C) 4π D) 8π — **26. C**



27. It's sunny 2/3 of 36 days, or 24 days. Since I get hosed 1/4 of these 24 days, I expect to get hosed $(1/4)\times 24$ times, or 6 times, in 36 days.
A) 6 B) 9 C) 12 D) 24 — **27. A**

28. $(25\times 2)\times(20\times 2)\times(15\times 2)\times(10\times 2)\times(5\times 2) = (25\times 20\times 15\times 10\times 5)\times 32$.
A) 2 B) 10 C) 20 D) 32 — **28. D**

29. 100% of $10^2 = 1\times 10^2 = 10^2 = 10\times 10$.
A) 10 B) 10^2 C) 10^3 D) 10^4 — **29. A**