	Answers
30. Multiply 7 by any of these: 2, 2^2, 5, 5^2, 2×5, $2^2\times5$, 2×5^2, or $2^2\times5^2$. A) 99 B) 8 C) 7 D) 5	30. B
31. Number the coordinates 1-9, as shown. 1 2 3 4 5 6 7 8 9 The distance from B to H is $8-2=6$. A B C D E F G H I The distance from D to G is $7-4=3$. A) A to F B) E to G C) C to E D) D to G	31. D
32. 15 weeks = 105 days. If I ride for 53 of these days, then I ride 53×50 km = 2650 km. A) 2250 km B) 2600 km C) 2650 km D) 3000 km	32. C
33. $\sqrt{8\times8}\times\sqrt{8\times8}=8\times8=64$. A) 64 B) 32 C) 16 D) 8	33. A
34. For every 4 girls and 1 boy, the difference is 3. The difference is *always* divisible by 3. Of the choices, only 2013 is divisible by 3. A) 2013 B) 2011 C) 2009 D) 2008	34. A
35. 2, 12, 20-29, 32, 42, 52, 62, 72, 82, and 92 use a 2; that's 19 numbers. A) 20 B) 19 C) 11 D) 10	35. B
36. Since $806\div26=31$, the 806th letter I write will be the last letter of the 31st time I write the full alphabet; it will be a Z. A) A B) E C) V D) Z	36. D
37. Use equivalent ratios: 3:2 = 18:12, and $18-12=6$. I am now 18. In 4 years, I will be $18+4=22$. A) 18 B) 20 C) 22 D) 24	37. C
38. Each of these sums is 25: $1+24$, $2+23$, $3+22$, $4+21$, $5+20$, $6+19$, $7+18$, $8+17$, $9+16$, $10+15$, $11+14$, and $12+13$. There are 12 such pairs. A) 1 B) 6 C) 12 D) 24	38. C
39. (1 to 200) = (1 to 100) + $[(100+1)+(100+2)+\ldots+(100+100)]$ = (1 to 100) + $[(100\times100)+$ (1 to 100)] = 5050 + [10 000 + 5050] = 20 100. A) 5150 B) 10 100 C) 11 050 D) 20 100	39. D
40. The only possible distributions (Al,Bo,Carl) are these ten: (1,1,4), (1,2,3), (1,3,2), (1,4,1), (2,1,3), (2,2,2), (2,3,1), (3,1,2), (3,2,1), and (4,1,1). A) 10 B) 9 C) 8 D) 7	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 17 or 24, 2009

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 150 for the letter answers to each question and the rating scale for this contest.

1. $25 + 35 + 45 = (25 + 35) + 45 = 60 + 45$.
A) 25 B) 35 C) 45 D) 55 — **1. C**

2. The number of weeks in 139 days is most nearly $140 \div 7 = 20$.
A) 5 B) 14 C) 19 D) 20 — **2. D**

3. Together, July & August have 62 days.
That's twice the 31 days in March.
A) March B) April C) June D) November — **3. A**

4. $3+6+9+12 = 30 = 3 \times 10 = 3 \times (1+2+3+4)$.
A) 5 B) $1+2+3+4$ C) 12 D) $1 \times 2 \times 3 \times 4$ — **4. B**

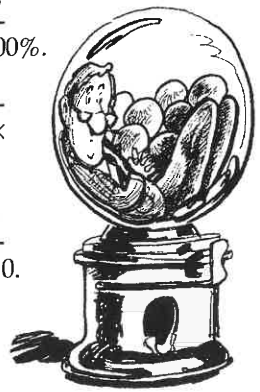
5. $8002-2008 = (8002+1)-(2008+1) = 8003-2009$.
A) 9003 B) 9002 C) 8003 D) 8002 — **5. C**

6. If both square S and triangle T have perimeter 60 cm, then
(side of T) − (side of S) = (60/3) cm − (60/4) cm = 5 cm.
A) 3 cm B) 5 cm C) 8 cm D) 15 cm — **6. B**

7. Side-length = 60/(# sides). No polygon has only 2 sides.
A) 30 = 60/2 B) 20 = 60/3 C) 15 = 60/4 D) 12 = 60/5 — **7. A**

8. Average = $(\$2+\$4+\$6+\$8+\$10) \div 5 = \$6 = 600$ pennies.
A) 3000 B) 600 C) 550 D) 500 — **8. B**

9. $1 \times 2 \times 3 \times 4 \times 5 \times (2 \times 3) = 2 \times 4 \times 2 \times (1 \times 3 \times 5 \times 3) = 16 \times 45$.
A) 5 B) 15 C) 45 D) 75 — **9. C**



10. $50\% \times 30\%$ = half of 30% = 15% = 15% of 100%.
A) 10% B) 25% C) 100% D) 150% — **10. C**

11. To evaluate $60 \div 4 + 1 \times 3$, we first do the $\times$ and $\div$ in the order in which they appear.
Do the addition last. We get $15 + 3 = 18$.
A) 4 B) 18 C) 36 D) 48 — **11. B**

12. $(20 \times 30) \div 40 = 600 \div 40 = 15$; remainder = 0.
A) 30 B) 15 C) 10 D) 0 — **12. D**

13. $180 \div 6 = 30 = 6 \times 5$.
A) 180 B) 36 C) 30 D) 5 — **13. D**

14. Ann's awake 16 hours each day. In 10 days, that's (10×16) hours.
A) 10×16 B) 8×10 C) 8×24 D) 16×24 — **14. A**

15. 25 dimes = $250¢ = 125 \times 2¢ = 125 \times 2$ pennies.
A) 1 penny B) 1 nickel C) 2 pennies D) 2 nickels — **15. C**

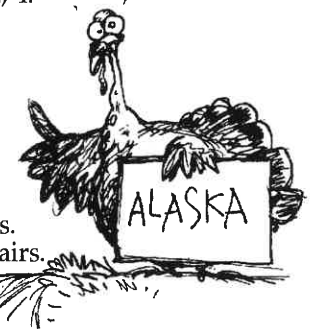
16. 1 m = 100 cm and 1 km = 1000 m; the correct ratio is 100:1000.
A) 100:1000 B) 1000:100 C) 1:100 D) 100:1 — **16. A**

Go on to the next page **6**

17. Al ran twice as far as Bob. Split 18 km into two parts, one twice the other, to see that Bob ran 6 km and Al ran twice as far, 12 km.
A) 3 km B) 6 km C) 9 km D) 12 km — **17. D**

18. The ones' digits repeat in groups of four: 2, 4, 8, 6, 2, 4, 8, 6, ...
The ones' digits of 2^{48}, 2^{49}, 2^{50} are 6, 2, 4.
A) 0 B) 2 C) 4 D) 8 — **18. C**

19. Since $225° = 180° + 45°$, the bird turns 45° past south. That's southwest.
A) southwest B) southeast
C) northwest D) northeast — **19. A**



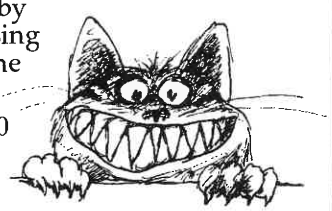
20. 1 dozen = 6 pairs; 2 dozen = 12 pairs.
Mult. # of dozens by 6 to get # of pairs.
A) multiply, 6 B) divide, 6
C) multiply, 2 D) divide, 2 — **20. A**

21. Since $1+1 < 3$, the side-lengths of a triangle cannot be 1, 1, 3.
A) 1, 1, 3 B) 2, 2, 3 C) 3, 3, 3 D) 4, 4, 3 — **21. A**

22. As an example, 42 is divisible by 6 and by 14 but not by 12.
A) 21 B) 12 C) 7 D) 3 — **22. B**

23. Rounding, 398° C is closer to 400° C than to 390° C.
A) 380° C B) 390° C C) 399° C D) 400° C — **23. D**

24. Increasing \$1200 by 10% increases it by \$120. The new price is \$1320. Decreasing \$1320 by 10% decreases it by \$132. The final price is \$1320 − \$132 = \$1188.
A) \$1212 B) \$1200 C) \$1188 D) \$1100 — **24. C**

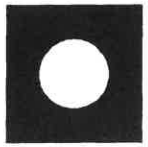


25. $10^5 + 10^6 = 1\,100\,000 = 11 \times 10^5$.
A) 11 B) 12 C) 10^2 D) 10^6 — **25. A**

26. If 2 hoots = 1 holler, then (10×1) hollers = (10×2) hoots.
A) 5 B) 13 C) 18 D) 20 — **26. D**

27. All but 33 can be represented as required, as shown below.
A) $43 = 1+42$ B) 33 C) $23 = 2+21$ D) $13 = 6+7$ — **27. B**

28. The square's perimeter = $4 \times$ (a side) = 16.
The circumference = (diameter) $\times \pi \approx 6.28$.
The region's perimeter is the sum ≈ 22.3.
A) 3.4 B) 12.9
C) 22.3 D) 28.6 — **28. C**



29. $2009 = 7^2 \times 41$, and the average of 7 and 41 is $(7+41) \div 2 = 24$.
A) 2009 B) 147 C) 48 D) 24 — **29. D**

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