

Online Math League  
2009 – 2010 Sixth Grade Contest #2

Student Name \_\_\_\_\_ Date \_\_\_\_\_

Rules: You have 30 minutes to complete this test. You must work independently, and calculators and other reference tools are not permitted. Each question has exactly one right answer. Do your best!

1. A peck can hold a dozen dozen peppers. I have 1,121 peppers. How many pecks can I fill?

- A. 5                      B. 6                      C. 7                      D. 8                      E. 9

2. Jorge had a batting average at the end of the year of .400. He was up to bat 110 times during the year and every time he either got a base hit or he struck out. How many base hits did Jorge get during the year?

- A. 40                      B. 44                      C. 48                      D. 52                      E. 56

3. What number comes next in the following pattern?

1, 2, 4, 8, 16, 32, \_\_\_\_\_

- A. 48                      B. 52                      C. 56                      D. 60                      E. 64

4. Rosie wants to fence in her garden. The garden is 8 feet long and 4 feet wide. How much fence does she need?

- A. 12 feet                B. 16 feet                C. 20 feet                D. 24 feet                E. 30 feet

5. Kate got a job working at a gas station. She makes \$8 per hour. Her employer has to withhold 6.2% of her pay for social security and another 1.45% of her pay for Medicare. If she works 40 hours this week, and has no other withholdings, how much will her check be?

- A. \$295.52                B. \$298.12                C. \$300.25                D. \$302.84                E. \$304.14

6. Mark and Bill went bowling every week last winter. Bill beat Mark  $\frac{2}{3}$  of the games. Of the games that Bill won,  $\frac{3}{5}$  of them were won by five pins or less. What fraction of the games did Bill win by more than 5 pins?

- A.  $\frac{2}{5}$                       B.  $\frac{1}{15}$                       C.  $\frac{2}{15}$                       D.  $\frac{4}{15}$                       E.  $\frac{5}{8}$

7. A store had a big three day sale. On Friday they sold \$11,161 of product. On Saturday, they sold \$15,934 of product. On Sunday, they sold \$14,122 of product. What was the store's average daily sales for these three days?

- A. \$13,739                B. \$13,828                C. \$12,998                D. \$12,618                E. \$14,128

8. Wilt scored 100 points in a basketball game. He made 36 shots. Each shot was worth two points. He also made several free-throws, which were each worth one point. How many free-throws did he make?

- A. 24                      B. 26                      C. 28                      D. 32                      E. 36

9. Gary went for a 10-mile run. He ran eight-minute miles for the first four miles. He then picked up the pace and ran seven-minute miles for the next four miles. He then slowed down to nine-minute miles over the final two miles. What was Gary's average pace per mile for the entire run?

- A. 7 minutes, 12 seconds                      B. 7 minutes, 26 seconds                      C. 7 minutes, 48 seconds  
D. 8 minutes, 4 seconds                      E. 8 minutes, 28 seconds

10. David ran around a track four times. He ran his first lap in 1 minute, 35 seconds. Each lap he ran was 13 seconds slower than the lap before it. How long did it take him to run the fourth lap?

- A. 2 minutes, 20 seconds                      B. 2 minutes, 14 seconds                      C. 2 minutes, 8 seconds  
D. 2 minutes, 4 seconds                      E. 2 minutes, 2 seconds

11. Joe buys a car that cost \$20,000. He pays \$5,000 when he buys the car, and takes out a loan for the rest. He does not have to pay interest on the loan. If he pays \$500 each month, how long will it take for him to pay the car off?

- A. 2 years                      B. 2 years, 3 months                      C. 2 years, 6 months  
D. 2 years, 9 months                      E. 3 years

12. Which of the following equations is written correctly?

- A.  $3^2 = 2^3$                       B.  $3^2 < 2^3$                       C.  $3^2 > 2^3$                       D.  $3^2 + 2^3 = 16$                       E.  $3^2 + 2^3 < 16$

13. Which of the following is a prime number?

- A. 9                      B. 17                      C. 21                      D. 39                      E. 49

14. Which of the following numbers are larger than their squares?

- A. 0                      B. 0.5                      C. 1.0                      D. 1.5                      E. 2.0

15. Mary has \$1 in her bank account. If her money doubles every day, how many days will it take for her account to have \$1,000?

- A. 10                      B. 30                      C. 50                      D. 100                      E. 512

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Answer Key, 2009-2010 Sixth Grade Contest #2**

1. **C** (1,121 peppers divided by 144 ( $12 \times 12$ ) = approximately 7.785 pecks. So seven pecks could be filled, but an eighth peck could not.)
2. **B** (110 at bats  $\times$  .400 = 44 base hits.)
3. **E** (Each term is double the previous term.)
4. **D** (The garden is a rectangle, and the perimeter of a rectangle =  $2(\text{length} + \text{height})$ . In this case, however, we would replace height with width. So the formula becomes  $2(8+4) = 24$ .)
5. **A** ( $\$8$  per hour  $\times$  40 hours =  $\$320$  gross.  $6.2\%$  of  $\$320 = \$19.84$  and  $1.45\%$  of  $\$320 = \$4.64$  for total deductions of  $\$24.48$ . So her net check would be  $\$320 - \$24.48$ , or  $\$295.52$ .)
6. **D** (Bill wins two-thirds of the games, and of those, he wins two-fifths by more than five pins. Two-thirds  $\times$  two-fifths = four-fifteenths of the games that Bill wins by more than five pins.)
7. **A**
8. **C**
9. **C** (Gary runs the first four miles in 32 minutes. He runs the next four miles in 28 minutes, and the final two miles in 18 minutes. So the entire 10-mile run takes him 78 minutes ( $32 + 28 + 18$ ), which averages out to 7 minutes and 48 seconds per mile.)
10. **B**
11. **C** (Paying off  $\$15,000$  at  $\$500$  per month with no interest would take 30 months.)
12. **C**
13. **B**
14. **B**
15. **A** (On the first day Mary's money would double to  $\$2$ . The next day she would have  $\$4$ , then  $\$8$ ,  $\$16$ ,  $\$32$ ,  $\$64$ ,  $\$128$ ,  $\$256$ ,  $\$512$ , and on the tenth day she would have  $\$1,024$ .)