



Oklahoma School of Science and Mathematics
Sixth Annual Middle School Mathematics Contest
Round One, Spring, 2008

Directions: Write the answer to each question in the box to the right of the question. Units are given in plural form even if the singular form is correct. Use scratch paper provided to do your work. Calculators are allowed, but not necessary.

Common fractions should be in simplest form ($\frac{a}{b}$, not mixed numbers).

1. If $x = 4$, what is the value of $3x - 6$?	1. 6
2. Simplify $\frac{3}{4} + \frac{18}{5} \div \frac{9}{25}$. Write your answer as a common fraction in lowest terms.	2. $\frac{43}{4}$
3. Heather has enlarged a $3'' \times 5''$ picture so the both the length and width are doubled. How many times larger is the area of the enlarged picture compared to the original?	3. 4
4. How many digits are in the expanded form of 6.023×10^{23} ?	4. 24 digits
5. Nathan parked his car at Flyby Parking for his family. He has a coupon for a 20% discount off the entire cost of parking. How much does he have to pay?	5. \$ 25.60
6. It takes 2 hours to drive from Tulsa to Oklahoma City. If you stop for 45 minutes for lunch, and then drive back to Tulsa, how long does the round trip take?	6. 165 minutes
7. Paulina has a bag of marbles. There are 7 blue marbles and 7 red marbles. If she randomly chooses one marble, what is the probability that she will choose a blue marble?	7. $\frac{1}{5}$
8. Jennifer has 72 marbles. She has 12 more marbles than Sam. How many marbles does Sam have?	8. 90
9. A recipe for blueberry muffins calls for 2 sticks of butter and 1 cup of flour. How many cups of butter are needed for 14 cups of flour?	9. $\frac{3}{14}$ cups
10. What is the value of 2^3 ?	10. 2
11. How many squares are there in a 4×4 grid? (Count all squares, including those that are not aligned with the grid lines.)	11. 14 squares
12. What is the sum of the integers from -10 to 10?	12. -80
13. A family has 100 marbles. 16 of the marbles are blue. What percent of the marbles are blue?	13. 1.6 %
14. How many lines of symmetry does a square have?	14. 1 lines
15. How many diagonals does a square have?	15. 20 diagonals
16. What is the greatest common divisor of 12 and 18?	16. 42
17. A farmer has a square field. He wants to spray water over the field. He has a hose that can spray water over a 100 foot wide area. What percent of the square field is <u>not</u> watered?	17. 21.5 %
18. What value of x that <u>minimizes</u> the absolute value of $(7x^2 - 12x)$?	18. 0
19. In how many different ways can the letters in BIGFOOT be rearranged?	19. 2520 ways
20. What is the area of the triangle formed by the x -axis, the y -axis and the line $3x + 8y = 12$?	20. 3 sq. units