

11th Annual
Oklahoma School of Science and Mathematics
Middle School Mathematics: An Awesome Contest
February 23, 2013

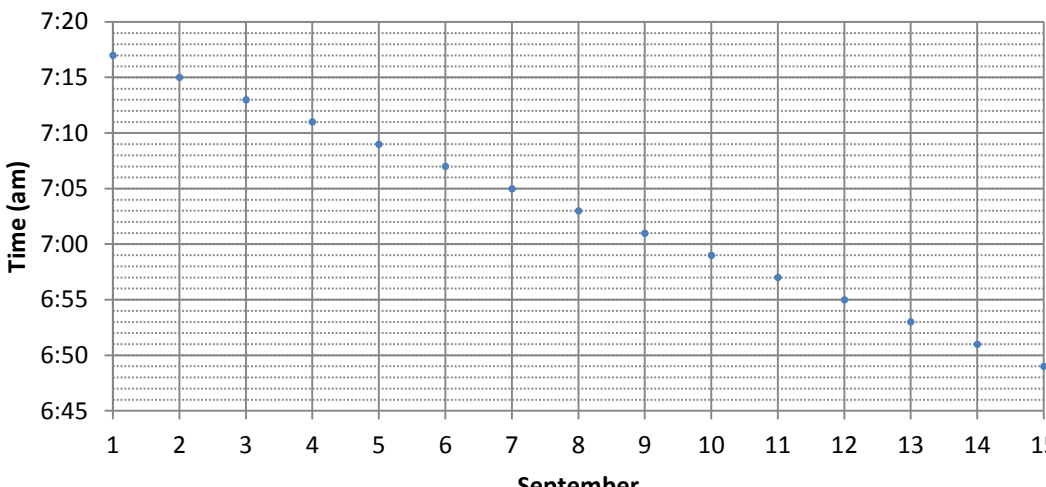



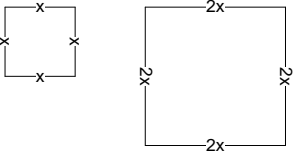
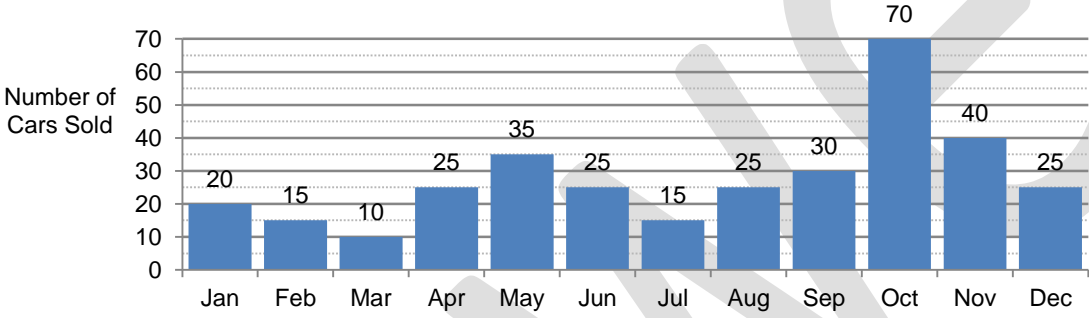
NAME: (Please print) <hr/> Email <hr/>	AGE <hr/>	DATE OF BIRTH mm/dd/yy <hr style="width: 50%; margin: 0 auto;"/>	GRADE LEVEL <div style="font-size: 2em; font-weight: bold; margin: 10px 0;">6</div>
<div style="text-align: center;">SCORE</div> (For official use) L: _____ R: _____ Total: _____ TB: Y N	GENDER (Circle one) M F	HOME ADDRESS (Please print) Street _____ City _____ Zip _____ School _____	
Parents' names: (Please print)			

Directions: Use the scratch paper provided to do your work. Calculators are allowed, but not necessary. Write the answer(s) 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. All fractions should be in simplest form, $\frac{3}{2}$ not $1\frac{1}{2}$.

This is a 27-question, 1-hour contest. The 27th question is on the last page and will be used to break ties. You must show your work on the 27th question. Each question is worth one point. Your score will be the number of correct answers (excluding the tie-breaker). There is no partial credit or penalty for wrong answers. Please continue working or reworking problems until time is called.

Do Not Open or Turn Over Until Instructed To Do So

1. Simplify: $\frac{1-\frac{1}{2}}{1-\frac{1}{3}}$	1. $\frac{3}{4}$
2. What is $\frac{9}{4} + \frac{3}{4}$?	2. 3
3. Which of these numbers is the smallest? a) 0.66 b) 6/10 c) 66/100 d) 13/20 e) 2/3	3. Circle one a <input type="checkbox"/> b <input checked="" type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e
4. How much greater is $1+2+3+4+5+6+7+8+9+10$ than $1+2+3+4+5$?	4. 40
5. The clock reads 10:30 pm. What time will it be 22 hours and 30 minutes from now? Specify am or pm.	5. 9:00 pm
6. What is $(2 + 6x) + (5 - 8x)$?	6. $7-2x$ or $-2x+7$
7. Before you are able to take a bite of your candy bar, a friend comes along and breaks off $\frac{1}{3}$ of the bar. Another friend then takes $\frac{1}{2}$ of what was left. What part of the original bar do you have left?	7. $\frac{1}{3}$
8. The graph below displays the time of sunrise at OSSM for the first 15 days of September. On what day does the sun rise at 7:01 am? 	8. Sep 9
9. $a \times b = 30$ and $c \times d = 4$. What is $a \times b \times c \times d$?	9. 120
10. Simplify $(-17 + 5x) - (12 + 8x)$.	10. $-3x - 29$ or $-29 - 3x$ or $-(29 + 3x)$ or $-(3x + 29)$
11. On a number line, what is the largest number that is twice as far from 5 as it is from 8? 	11. 11
12. Six OSSM students can assemble 24 bicycles in 8 hours. How many bicycles can 3 OSSM students make in 4 hours?	12. 6 bicycles
13. Rebecca takes 20 minutes to cut a stick of bamboo into 5 pieces. How long does it take her to cut another stick into 9 pieces?	13. 40 minutes
14. In how many ways can United States coins be used to total 21 cents?	14. 9

15. $\frac{x}{2} + \frac{x}{4} = 6$ What is x?	15. 8
16. $a \div 2 \div 2 \div 2 \div 2 = 1$ and $b \div 2 \div 2 \div 2 = 1$ Find a + b.	16. 24
<p>17. In the two squares shown, the perimeter increases 100% from the smaller to the larger square. What is the percentage <u>increase</u> in area?</p> <div style="text-align: center;">  </div>	17. 300%
18. If you flip a coin twice, what is the chance of getting heads both times? Express your answer as a fraction.	18. 1/4
<p>19. Using the chart below showing monthly sales of cars at a car dealership, determine the average number of cars sold in the first three months of the year.</p> <p style="text-align: center;">Car Sales for 2012</p> 	19. 15 cars
20. The average of Sara's first three test scores is 95 points. The average of her next two tests was 90 points. What is her overall average?	20. 93
<p>21. A new rectangle is formed by taking the length of a rectangle and increasing its length by 10% and by decreasing its width by 10%. How does the area of the new rectangle compare to the area of the original rectangle?</p> <p>a) the area of the new rectangle is exactly 99% of the original rectangle b) the new and original rectangles have the same area c) the new rectangle is 1% greater in area than the original rectangle</p>	21. Circle one: <input checked="" type="radio"/> a b c
22. Express the decimal sum as a reduced fraction. $0.45 + 0.305 + 0.05$	22. $\frac{161}{200}$
23. If $\begin{cases} a + 2b + 4c = 321 \\ b + 2c = 160 \end{cases}$ and then a =?	23. 1
24. Johanna has an 18" x 18" x 12" gift box that needs to be mailed in a 24" x 24" x 24" shipping carton. Packing peanuts come in 1-cubic foot bags. How many whole bags of packing peanuts does Johanna need to buy to ship the gift box?	24. 6 bags
25. How many 6 digit numbers end in 2013? a) 90 b) 99 c) 100 d) 2013	25. Circle one: <input checked="" type="radio"/> a b c d
26. The seven dwarfs are one year apart in age that is; the ages of the 7 dwarfs are consecutive whole numbers. Snow White is the same age as the youngest dwarf. If the sum of the ages of Snow White and the seven dwarfs is 181 years, how old is Snow White?	26. 20 yrs old

27. **Tie-Breaker:** The first pair of odd numbers is (1, 3), the second pair is (5, 7), the third pair is (9, 11) and so on. What is the sum of the 252nd pair of odd numbers?

Show your work.

Place a box around your answer.

2012

Answers