

SIGMA

MIDDLE / JUNIOR HIGH MATHEMATICS LEAGUE

CONTEST NUMBER 1

GRADE 9

NAME: _____

SCORE: _____

TIME: 30 minutes

ANSWER COLUMN

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| <p>1. A recent report stated that the five most popular ice cream flavors are Vanilla (26%), Chocolate (12.9%), Neopolitan (4.8%), Strawberry (4.3%) and Cookies 'n' Cream (4%). If 1000 people were interviewed concerning their favorite flavor of ice cream, how many more people do you expect to name Vanilla over Chocolate as their favorite ice cream flavor?</p> | |
| <p>2. Let $a + b + c + d + e = 49$, $a + c + e = 31$, $a + b + d = 22$, and $c = 12$. What is the value of e?</p> | |
| <p>3. A pound is 16 ounces. Nine pennies weigh one ounce. The three Stooges, Moe, Larry, and Curly, each have a bag of pennies. Moe's money has a value of \$5.31, Larry's bag has a value of \$8.37, and Curly's has a value of \$7.56. If all three bags of coins were emptied into a large scale, how much would they weigh? Give your answer in the form of _____ pounds _____ ounces.</p> | |
| <p>4. Let a and b be digits of a three-digit number "$6ab$" that is divisible by 12. "ab" is also greater than 50. What is the sum of all the two-digit numbers "ab" for which these conditions are true?</p> | |
| <p>5. According to the Musgrave Pencil company the average pencil can be sharpened 17 times (if sharpened well) and will draw a line 35 miles long or write 45,000 words (considering all short and long words). A particular 500 page book averages 300 words per page. If these pencils are used to draw a line instead of writing a book, how long is this line? (Give your answer to the nearest tenth of a mile.) (Assume the same amount of pencil lead is to be used.)</p> | |
| <p>6. How many three-digit positive integers less than 200 have the units digit greater than the tens digit?</p> | |
| <p>7. A digital clock displays 1 or 2 digits for the hours and 2 digits for the minutes. Between the hours of 1:00 p.m. and 11:00 p.m. how many three-digit or four-digit displays will represent a perfect cube number?</p> | |
| <p>8. Rock Falls and the following towns are located along highway 30 in the U.S. The town of Columbus is west of Rock Falls. Ames is east of Columbus but west of Rock Falls. Lexington is east of Rock River but west of Columbus. Soda Springs is west of Lexington. Rock River is between Soda Springs and Columbus. Which town is the first town east of Rock River?</p> | |