



13th Annual Middle School Mathematics Contest of New Jersey

Thursday, February 13, 2025

No Calculator is allowed - 60 minutes

1. New packaging for fruit snacks contains 10% less weight than the original packaging. If the new package costs 15% more than the original package, by what fraction did the unit price increase? Express your answer as a common fraction.

2. After 3:24, how many minutes have elapsed the first time that the angle formed by the hour and minute hands is twice the measure of the angle formed by the hands at 3:24? Express your answer as a mixed number.

3. Now that it is a year after Jake joined the Middle School Math Club, he has been a member for one-third of the time that Maggie has been a member. In how many more years will Jake have been a member for two-thirds of the time that Maggie will have been?

4. The point $(5, 12)$ is rotated 90 degrees counterclockwise about the origin. What are the coordinates of its image? Express your answer as an ordered pair.

5. Peien rolls four standard six-sided dice. What is the probability that the sum of the numbers rolled on one pair of dice is 4 and the sum of the numbers rolled on the other pair is 10? Express your answer as a common fraction.

6. The price of a pair of shoes is reduced by 15%. Then its price is raised by 25%. The new price is \$10 higher than the original price. What was the original price?

7. Jane is traveling on an interstate highway where signs that are numbered consecutively starting with 1 are posted at every mile. If Jane is traveling at a speed of 72 mi/h, how many minutes will it take her to travel from mile marker 7 to mile marker 29? Express your answer as a decimal to the nearest tenth.

8. If $A + B = C + 1$, $B + C = D - 1$, $C + D = E + 1$, $D + E = F - 1$, $E + F = G + 1$, $F + G = A - 1$ and $G + A = B + 1$, what is the value of $A + B + C + D + E + F + G$?

9. A cafeteria offers apples, oranges and bananas with lunch. A student may take at most one of each fruit. Of the 61 students who got fruit with lunch, 5 students got only an apple and 7 got only an orange. Of the 16 students who got an apple and an orange, the 17 who got an orange and a banana, and the 20 who got an apple and a banana, 6 got all three fruits. What portion of the fruit taken by the 61 students were bananas? Express your answer to the nearest whole percent.

10. Ali's middle school has a total of 300 students on Team A and Team B. After 30 students are moved from Team A to Team B, there are twice as many students on Team A as there are on Team B. How many students were originally on Team B?