



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?