Math Team

Meet 3 Events A and B Problems 3 Practice 2018-19 and 2019-20

Event A

Problem #3 ("textbook with a twist"; 2 points)

Try to solve each problem within three minutes.

3. Layton has a rectangle. He triples the height and doubles the width and notes that the perimeter is now equal to 30. He does the same thing again to this new rectangle and notes that the perimeter is now 70. Determine exactly the perimeter of the original rectangle. (MSHSML 2019-20 3A #3)

Event A

Problem #3 ("textbook with a twist"; 2 points)

Try to solve each problem within three minutes.

3. Apples and melons are on sale at the local farmers' market. Elaine buys 10 apples and 5 melons, pays with $10.00 and receives change. Xi buys 5 apples and 10 melons, pays with $10.00 and also receives change. Elaine and Xi give me their change and I add 10 cents and buy 3 apples and 1 melon, receiving 2 cents in change. Jorge buys 20 apples and 20 melons with $25.00 and receives $1.00 in change. How much does each apple cost? [calculator allowed] (MSHSML 2018-19 3A #3)

Event B

Problem #3 ("textbook with a twist"; 2 points)

Try to solve each problem within three minutes.

3. Cyclic quadrilateral $ABCD$ has $AB = 12$, $BC = 8$, $CD = 5$, and $DA = 6$. If AC and BD are also integers, how long is AC? [calculator allowed] (MSHSML 2019-20 3B #3)

Event B

Problem #3 ("textbook with a twist"; 2 points)

Try to solve each problem within three minutes.

3. In *Figure 3*, $ABCD$ is a square whose side length is 32. $DMBN$ is a rhombus whose vertices lie on the diagonals of the square. If the area of the rhombus is 75% of the area of the square, determine exactly the length of $\overline{MN}$. [calculator allowed] (MSHSML 2018-19 3B #3)

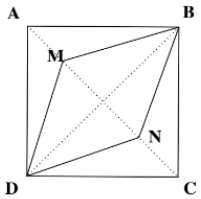

Figure 3