Math Team

Meet 3 Events C and D Problems 3 Practice 2018-19 and 2019-20

Event C

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

Try to solve each problem within three minutes.

3. $N = \frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i$ and $M = \frac{-3\sqrt{2}}{2} + \frac{3\sqrt{2}}{2}i$. What imaginary number, written in the form $0 + bi$, is on $\overline{MN}$ in the complex plane? (MSHSML 2017-18 3C #3)

Event C

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

Try to solve each problem within three minutes.

3. In $\triangle ABC$, $AB = 20\sqrt{3}$, $m\angle CAB = 45°$, $m\angle ACB = 60°$. Determine exactly AC. (MSHSML 2016-17 3C #3)

Event D

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

Try to solve each problem within three minutes.

3. Determine exactly the value of x: $x \log_3 x = 18$. (MSHSML 2017-18 3D #3)

Event D

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

Try to solve each problem within three minutes.

3. If $x > 2y > 0$ and $2\log(x-2y) = \log x + \log y$, determine $\frac{x}{y}$ exactly. (MSHSML 2016-17 3D #3)