Event A

Problem #1 ("quickie"; 1 point)

Try to solve each problem within one minute.

1. Determine exactly how many Turkish lira 1 dollar will buy if a hotel room that costs $54 may be obtained for 81 Turkish lira. [calculator allowed] (Based on MSHSML 2015-16 1A #1)

1. If $x = \dfrac{1}{2}$, $y = \dfrac{1}{3}$, and $z = \dfrac{1}{4}$, determine exactly the value of $\dfrac{x}{y+z}$. (MSHSML 2014-15 1A #1)

Problem #2 ("textbook"; 2 points)

Try to solve each problem within two minutes.

2. Determine the exact value of $\dfrac{0.\overline{7}}{0.\overline{63}}$. [calculator allowed] (MSHSML 2015-16 1A #2)

2. Express $0.037037037\ldots$ as a fraction $\dfrac{p}{q}$, where p and q are relatively prime integers. (MSHSML 2014-15 1A #2)
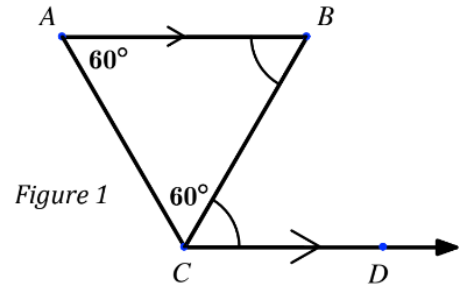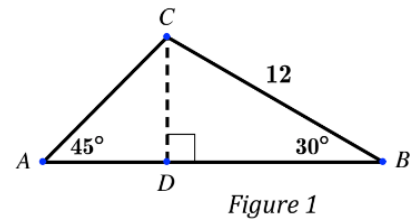
Event B

Problem #1 ("quickie"; 1 point)

Try to solve each problem within one minute.

1. In *Figure 1*, if $\triangle ABC$ is equilateral, and $\overline{CD}$ is parallel to $\overline{AB}$, calculate the measure of $\angle BCD$. [calculator allowed]
(MSHSML 2015-16 1B #1)

Figure 1

1. In $\triangle ABC$, $m\angle A = 45°$ and $m\angle B = 30°$ as shown in *Figure 1*. If $BC = 12$, determine exactly the length AC. [calculator allowed] (MSHSML 2014-15 1B #1)

Figure 1

Problem #2 ("textbook"; 2 points)
Try to solve each problem within two minutes.

2. Town A is located exactly 120 miles north of town B. If Sue hops in a car and drives directly east from town B at 50 mph, calculate how many hours (as a decimal) it will take for Sue to be exactly 241 miles from town A as the crow flies. [calculator allowed] (MSHSML 2015-16 1B #2)

2. In *Figure 2*, lines l_1 and l_2 are parallel, while lines l_3 and l_4 intersect at an angle of 17°. If the acute angle formed by l_1 and l_4 measures 44°, calculate the measure of the __obtuse__ angle between l_1 and l_3. [calculator allowed] (MSHSML 2014-15 1B #2)
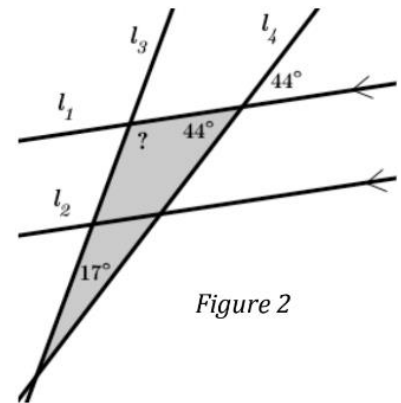

Figure 2