Mathlete Competition Sample Problems in Nemeth Code

Divisions

Junior Mathletes should be able to read, write, and solve problems in braille that contain fractions, mixed numbers, decimals, degrees, exponents, and grouping symbols. They should also be able to solve problems using what they know about the order of operations.

Senior Mathletes should be proficient with all of the Junior Mathlete content. In addition, they should be able to read, write, and solve longer problems in braille that may contain radicals, absolute value, negative numbers, and geometry.

Sprint Round Directions

of Questions: 20 questions

Amount of Time: 20 minutes

Points Possible: 20 points

In this round you will read a math expression in words and find the correct way to write the expression. Only write the problem number and the letter for the correct answer. You will receive one point for each correct answer.

If you braille an answer incorrectly, space and braille the correct answer. Only your last answer will be scored. You will be allowed exactly 20 minutes for this round. Please stop when I indicate that your time is up.

Sprint Round Samples

Junior Mathlete Sample Problems

1. Two-thirds minus one-half equals one-sixth.

$$\frac{2}{3} - \frac{1}{2} = \frac{1}{6}$$

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Answer: A

2. Forty-eight minus thirty is greater than ten.

$$48 - 30 > 10$$

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Answer: C

3. Three squared plus four squared equals five squared.

$$3^2 + 4^2 = 5^2$$

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Answer: B

Senior Mathlete Sample Problems

1. The square root of forty-nine is greater than five.

$$\sqrt{49} > 5$$

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Answer: C

2. The absolute value of negative seven equals seven.

$$\left|-7\right| = 7$$

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Answer: A

3. y is less than or equal to negative four x plus three.

$$y \le -4x + 3$$

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Answer: B

You Solve It Round Directions

of Questions: 10 questions

Amount of Time: 20 minutes

Points Possible: 20 points

In this round, you need to read and solve the problems using the order of operations. Remember to start with parentheses, then go to exponents, then multiplication and division, then addition and subtraction.

Write the problem number and the answer to that problem. There are no decimals or fractions in the correct answers. You will receive two points for each correct answer.

If you braille an answer incorrectly, space and braille the correct answer. Only your last answer will be scored. You will be allowed exactly 20 minutes for this round. Please stop when I indicate that your time is up.

You Solve It Round Samples

Junior Mathlete Sample Problems

1. $8 - 3\left(\dfrac{1}{2} + 1.5\right) \div 6$

   ⠼⠓⠤⠼⠉⠐⠣⠼⠁⠌⠃⠐⠖⠼⠁⠲⠢⠐⠜⠨⠌⠼⠋

   Answer: 7

2. $12 - 2^2 + 4 \times 5 \div 2$

   ⠼⠁⠃⠤⠼⠃⠘⠼⠃⠐⠖⠼⠙⠈⠡⠼⠑⠨⠌⠼⠃

   Answer: 18

Senior Mathlete Sample Problems

1. $13 - 2^2 + 5(8 - 7) - \sqrt{3 \cdot 12} + 200$

   ⠼⠁⠉⠤⠼⠃⠘⠼⠃⠐⠖⠼⠑⠐⠣⠼⠓⠤⠼⠛⠐⠜⠤⠜⠼⠉⠈⠡⠼⠁⠃⠜⠐⠖⠼⠃⠚⠚

   Answer: 208

2. $24 \cdot 3 \cdot \dfrac{1}{3} + 2(26 - 23) + |-5| - \dfrac{1}{4} - \dfrac{3}{4}$

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   Answer: 34

You Write It Round Directions

of Questions: 20 questions

Amount of Time: 30 minutes

Points Possible: 20 points

For this round, listen carefully to the expressions and braille what you hear. Be sure to number your answers. I will pause at certain times throughout the expression to give you time to write. We will begin with me reading the entire problem before you begin to braille. I will read the expression up to 3 times as needed.

You will receive one point for each correct answer. If you braille something incorrectly, rebraille the problem number and the entire correct math expression on a new line.

You Write It Round Samples

Junior Mathlete Sample Problems

1. Four-fifths minus zero point five is less than nine-tenths

$$\frac{4}{5} - 0.5 < \frac{9}{10}$$

   Answer: ⠿⠮⠦⠼⠙⠌⠑⠤⠼⠑⠲⠒�@⠦⠀⠿⠼⠊⠌⠁⠴⠿

2. Forty-six degrees

   $46°$

   Answer: ⠼⠙⠋⠘⠨⠡

Senior Mathlete Sample Problems

1. Five squared plus one minus the square root of y

$$5^2 + 1 - \sqrt{y}$$

   Answer: ⠼⠑⠘⠆⠐⠖⠼⠁⠤⠜⠽�

2. The measure of angle A is greater than ninety degrees

$$m\angle A > 90°$$

   Answer: ⠍⠫⠈⠁⠀⠈⠂⠀⠐⠂⠀⠼⠊⠴⠘⠨⠡

Relay Round Directions

of Questions: 26 questions

Amount of Time: 30 minutes

Points Possible: 26 points

For the relay round, there are variables. Find what each variable equals.

Look at these three problems:

$$a = 50 \div 5$$
$$a + 12 = b$$
$$c = 2b$$

Step 1: Find the value of a by dividing 50 by 5. The value of a is 10.
Step 2: Substitute the value of a into the next problem to get 10 + 12 = b.
Step 3: Find the value of b by adding 10 and 12. So the value of b is 22.
Step 4: Substitute the value of b into the next problem, c = 2b. Since a number and a variable next to each other means multiplication, you get c = 2 times 22.
Step 5: Find the value of c by multiplying 22 by 2. So, the value of c is 44.

You will keep taking the answer you get in one problem and use it in the next problem, all the way to z!

You may get a decimal, fraction, or negative number, but if numbers are getting really messy, you may want to go back and check your previous answers.

You will receive one point for each correct answer. If you braille an answer incorrectly, space and braille the correct answer. Only your last answer will be scored. You will be allowed exactly 30 minutes for this round. Please stop when I indicate that your time is up.

Relay Round Samples

Junior Mathlete Sample Problems (One calculation at each step)

1. $a = 1000 - 700$ Answer: a=300

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2. $a \div 30 = b$ Answer: b=10

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3. $c = b^2$ Answer: c=100

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Senior Mathlete Sample Problems (Two calculations at each step)

1. $a = 5^2 - 4$ Answer: a=21

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2. $a \div 3 + 4 = b$ Answer: b=11

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3. $c = \sqrt{\dfrac{99}{b}}$ Answer: c=3

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