



**Hustle  
Algebra  
Test #643**



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Algebra  
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**Hustle  
Algebra  
Test #643**

**#1 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Evaluate  $\sum_{k=1}^{20}(2k^2 - k)$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#1 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#1 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Evaluate  $\sum_{k=1}^{20}(2k^2 - k)$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#1 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Evaluate  $\sum_{k=1}^{20}(2k^2 - k)$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#2 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Solve for x:  $\left(\frac{1}{9}\right)^x = 27^{x-2}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#2 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Solve for x:  $\left(\frac{1}{9}\right)^x = 27^{x-2}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#2 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Solve for x:  $\left(\frac{1}{9}\right)^x = 27^{x-2}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#2 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Solve for x:  $\left(\frac{1}{9}\right)^x = 27^{x-2}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#3 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Simplify  $\frac{1}{1+\frac{1}{1-\frac{1}{1+i}}}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#3 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Simplify  $\frac{1}{1+\frac{1}{1-\frac{1}{1+i}}}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#3 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Simplify  $\frac{1}{1+\frac{1}{1-\frac{1}{1+i}}}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#3 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Simplify  $\frac{1}{1+\frac{1}{1-\frac{1}{1+i}}}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#4 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Evaluate  $\log_{3\sqrt{3}} 729$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#4 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Evaluate  $\log_{3\sqrt{3}} 729$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#4 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Evaluate  $\log_{3\sqrt{3}} 729$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#4 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Evaluate  $\log_{3\sqrt{3}} 729$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#5 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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A parabolic arch has a height of 20 ft and a width at its base of 30 ft. How many feet high is the arch 6ft from its center?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#5 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

A parabolic arch has a height of 20 ft and a width at its base of 30 ft. How many feet high is the arch 6ft from its center?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#5 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

A parabolic arch has a height of 20 ft and a width at its base of 30 ft. How many feet high is the arch 6ft from its center?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#5 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

A parabolic arch has a height of 20 ft and a width at its base of 30 ft. How many feet high is the arch 6ft from its center?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#6 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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The endpoints of the major axis of an ellipse are  $(13, 0)$  and  $(-13, 0)$ . The coordinates of the foci are  $(\sqrt{5}, 0)$  and  $(-\sqrt{5}, 0)$ . What is the area enclosed by the ellipse?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#6 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

The endpoints of the major axis of an ellipse are  $(13, 0)$  and  $(-13, 0)$ . The coordinates of the foci are  $(\sqrt{5}, 0)$  and  $(-\sqrt{5}, 0)$ . What is the area enclosed by the ellipse?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#6 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#6 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#7 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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Two roots of a cubic polynomial with real coefficients are  $4 - i$  and  $-6$ . Find the product of all the roots of this polynomial.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#7 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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Two roots of a cubic polynomial with real coefficients are  $4 - i$  and  $-6$ . Find the product of all the roots of this polynomial.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#7 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Two roots of a cubic polynomial with real coefficients are  $4 - i$  and  $-6$ . Find the product of all the roots of this polynomial.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#7 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Two roots of a cubic polynomial with real coefficients are  $4 - i$  and  $-6$ . Find the product of all the roots of this polynomial.

Answer : \_\_\_\_\_

Round 1 2 3 4 5



**#8 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Let  $p(x) = x^3 - 7x^2 + 11x - 23$  have roots a, b, and c. Find the value of  $\frac{1}{ab} + \frac{1}{bc} + \frac{1}{ca}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#8 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Let  $p(x) = x^3 - 7x^2 + 11x - 23$  have roots a, b, and c. Find the value of  $\frac{1}{ab} + \frac{1}{bc} + \frac{1}{ca}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#8 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Let  $p(x) = x^3 - 7x^2 + 11x - 23$  have roots a, b, and c. Find the value of  $\frac{1}{ab} + \frac{1}{bc} + \frac{1}{ca}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#8 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Let  $p(x) = x^3 - 7x^2 + 11x - 23$  have roots a, b, and c. Find the value of  $\frac{1}{ab} + \frac{1}{bc} + \frac{1}{ca}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#9 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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Two different 2-digit positive integers are randomly chosen and multiplied together. What is the probability that the resulting product is even?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#9 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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Two different 2-digit positive integers are randomly chosen and multiplied together. What is the probability that the resulting product is even?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#9 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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Two different 2-digit positive integers are randomly chosen and multiplied together. What is the probability that the resulting product is even?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#9 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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Two different 2-digit positive integers are randomly chosen and multiplied together. What is the probability that the resulting product is even?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#10 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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Find all the roots of

$$f(x) = 6x^4 + 41x^3 + 88x^2 + 67x + 14$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#10 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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Find all the roots of

$$f(x) = 6x^4 + 41x^3 + 88x^2 + 67x + 14$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#10 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

---

Find all the roots of

$$f(x) = 6x^4 + 41x^3 + 88x^2 + 67x + 14$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#10 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

---

Find all the roots of

$$f(x) = 6x^4 + 41x^3 + 88x^2 + 67x + 14$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#11 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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How many positive integral factors does 720 have?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#11 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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How many positive integral factors does 720 have?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#11 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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How many positive integral factors does 720 have?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#11 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

How many positive integral factors does 720 have?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#12 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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Express  $699_{15}$  in base 8

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#12 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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Express  $699_{15}$  in base 8

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#12 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

---

Express  $699_{15}$  in base 8

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#12 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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Express  $699_{15}$  in base 8

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#13 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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What is the tens digit of  $7^{2018}$  ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#13 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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What is the tens digit of  $7^{2018}$  ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#13 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

---

What is the tens digit of  $7^{2018}$  ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#13 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

---

What is the tens digit of  $7^{2018}$  ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#14 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

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Express  $.2\overline{37}$  as an improper fraction

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#14 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

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Express  $.2\overline{37}$  as an improper fraction

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#14 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

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Express  $.2\overline{37}$  as an improper fraction

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#14 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

Express  $.2\overline{37}$  as an improper fraction

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#15 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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Find the remainder when  $2x^{2018} + 1$  is divided by  $x - 1$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#15 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Find the remainder when  $2x^{2018} + 1$  is divided by  $x - 1$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#15 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Find the remainder when  $2x^{2018} + 1$  is divided by  $x - 1$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#15 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Find the remainder when  $2x^{2018} + 1$  is divided by  $x - 1$

Answer : \_\_\_\_\_

Round 1 2 3 4 5



**#16 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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Find all sets of 4 consecutive positive integers such that the sum of the cubes of three of them equals the cube of the fourth.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#16 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Find all sets of 4 consecutive positive integers such that the sum of the cubes of three of them equals the cube of the fourth.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#16 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Find all sets of 4 consecutive positive integers such that the sum of the cubes of three of them equals the cube of the fourth.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#16 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Find all sets of 4 consecutive positive integers such that the sum of the cubes of three of them equals the cube of the fourth.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#17 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

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Find the sum of the first nine terms of an arithmetic sequence of real numbers with 2 as the fifth term and 8 as the fourteenth term.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#17 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

Find the sum of the first nine terms of an arithmetic sequence of real numbers with 2 as the fifth term and 8 as the thirteenth term.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#17 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

Find the sum of the first nine terms of an arithmetic sequence of real numbers with 2 as the fifth term and 8 as the thirteenth term.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#17 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

Find the sum of the first nine terms of an arithmetic sequence of real numbers with 2 as the fifth term and 8 as the thirteenth term.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#18 Algebra 2 – Hustle**  
**MAO National Convention 2018**

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Evaluate:  $\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots}}}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#18 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Evaluate:  $\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots}}}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#18 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Evaluate:  $\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots}}}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#18 Algebra 2 – Hustle**  
**MAO National Convention 2018**

---

Evaluate:  $\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots}}}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#19 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

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What is the sum of the coefficients of the expansion of  $(2x + y - z)^{12}$  ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#19 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

What is the sum of the coefficients of the expansion of  $(2x + y - z)^{12}$  ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#19 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

What is the sum of the coefficients of the expansion of  $(2x + y - z)^{12}$  ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#19 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

What is the sum of the coefficients of the expansion of  $(2x + y - z)^{12}$  ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#20 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

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What is the abscissa of the highest point on the graph of  $f(x) = -2x^2 + 4x - 17$ ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#20 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

What is the abscissa of the highest point on the graph of  $f(x) = -2x^2 + 4x - 17$ ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#20 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

What is the abscissa of the highest point on the graph of  $f(x) = -2x^2 + 4x - 17$ ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#20 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

What is the abscissa of the highest point on the graph of  $f(x) = -2x^2 + 4x - 17$ ?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#21 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Find all solutions to  $x = \sqrt{3x + 4}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#21 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Find all solutions to  $x = \sqrt{3x + 4}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#21 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Find all solutions to  $x = \sqrt{3x + 4}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#21 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Find all solutions to  $x = \sqrt{3x + 4}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#22 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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$$A = \begin{bmatrix} 2 & 1 \\ -4 & 4 \end{bmatrix} \quad B = \begin{bmatrix} x & y \\ z & w \end{bmatrix} \quad C = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

If C is the product of matrices A and B, what is the sum of the entries of matrix B?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#22 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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$$A = \begin{bmatrix} 2 & 1 \\ -4 & 4 \end{bmatrix} \quad B = \begin{bmatrix} x & y \\ z & w \end{bmatrix} \quad C = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

If C is the product of matrices A and B, what is the sum of the entries of matrix B?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#22 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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$$A = \begin{bmatrix} 2 & 1 \\ -4 & 4 \end{bmatrix} \quad B = \begin{bmatrix} x & y \\ z & w \end{bmatrix} \quad C = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

If C is the product of matrices A and B, what is the sum of the entries of matrix B?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#22 Algebra 2 - Hustle**  
**MAΘ National Convention 2018**

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$$A = \begin{bmatrix} 2 & 1 \\ -4 & 4 \end{bmatrix} \quad B = \begin{bmatrix} x & y \\ z & w \end{bmatrix} \quad C = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

If C is the product of matrices A and B, what is the sum of the entries of matrix B?

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#23 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Find the exact value of the eccentricity of the conic given by the equation

$$\frac{x^2}{9} - \frac{y^2}{4} = 1$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#23 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Find the exact value of the eccentricity of the conic given by the equation

$$\frac{x^2}{9} - \frac{y^2}{4} = 1$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#23 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Find the exact value of the eccentricity of the conic given by the equation

$$\frac{x^2}{9} - \frac{y^2}{4} = 1$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#23 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Find the exact value of the eccentricity of the conic given by the equation

$$\frac{x^2}{9} - \frac{y^2}{4} = 1$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5



**#24 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

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Evaluate  $i + 2i^2 + 3i^3 + 4i^4 + \dots + ni^n + \dots + 16i^{16}$ ,  
where  $i = \sqrt{-1}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#24 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

Evaluate  $i + 2i^2 + 3i^3 + 4i^4 + \dots + ni^n + \dots + 16i^{16}$ ,  
where  $i = \sqrt{-1}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#24 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

Evaluate  $i + 2i^2 + 3i^3 + 4i^4 + \dots + ni^n + \dots + 16i^{16}$ ,  
where  $i = \sqrt{-1}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#24 Algebra 2 – Hustle**  
**MAΘ National Convention 2018**

---

Evaluate  $i + 2i^2 + 3i^3 + 4i^4 + \dots + ni^n + \dots + 16i^{16}$ ,  
where  $i = \sqrt{-1}$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#25 Algebra 2 - Hustle**  
**MAO National Convention 2018**

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Find the quadratic with rational coefficients and quadratic term  $x^2$  that has  $-3 + 3\sqrt{6}$  as a root.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#25 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Find the quadratic with rational coefficients and quadratic term  $x^2$  that has  $-3 + 3\sqrt{6}$  as a root.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#25 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Find the quadratic with rational coefficients and quadratic term  $x^2$  that has  $-3 + 3\sqrt{6}$  as a root.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#25 Algebra 2 - Hustle**  
**MAO National Convention 2018**

---

Find the quadratic with rational coefficients and quadratic term  $x^2$  that has  $-3 + 3\sqrt{6}$  as a root.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

