MU ALPHA THETA - MAINE '95 NAME:_____

SCHOOL BOWL - THETA DIVISION STUDENT ID NUMBER:_____
INDIVIDUAL ROUND I NON-CALCULATOR

TIME: CIRCLE ONE 0-60 secs. 60-90 secs. 90-120 sec.
12 pts. 8 pts 4 pts.

ANSWER - QUESTION #1:_____

1. Simplify completely: $-8^2 - 2^8 - (-8)^2 - \sqrt[3]{512}$

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12 pts. 8 pts 4 pts.

ANSWER - QUESTION #2:_____

2. A certain circle has a positive radius such that the circle's circumference is three times its area. What is the exact radius of the circle?

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INDIVIDUAL ROUND I NON-CALCULATOR

TIME: CIRCLE ONE 0-60 secs. 60-90 secs. 90-120 sec.
12 pts. 8 pts 4 pts.

ANSWER - QUESTION #3:_____

3. Find the value of k so that the points (3,3), (-12, -22) and (k,7) are on the same line.

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INDIVIDUAL ROUND I NON-CALCULATOR

TIME: CIRCLE ONE 0-60 secs. 60-90 secs. 90-120 sec.
12 pts. 8 pts 4 pts.

ANSWER - QUESTION #4:_____

4. In how many 0's does 50! end?

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SCHOOL BOWL - THETA DIVISION STUDENT ID NUMBER:_____
TEAM ROUND II CALCULATOR

TIME: CIRCLE ONE 0- 1 min. 15 pts. 1 - 2 min 10 pts 2 - 3 min.. 5 pts.

ANSWER - QUESTION #1:_____

1. State the smallest rational root for $12x^3 - 17x^2 - 13x - 2 = 0$.

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TEAM ROUND II CALCULATOR

TIME: CIRCLE ONE 0- 1 min. 15 pts. 1 - 2 min 10 pts 2 - 3 min.. 5 pts.

ANSWER - QUESTION #2:_____

2. A 25-foot ladder is placed against a vertical wall. The foot of the ladder is 20 feet from the the bottom of the wall. If the top of the ladder slips down 8 feet, how far will the foot of the ladder slide?

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TEAM ROUND II CALCULATOR

TIME: CIRCLE ONE 0- 1 min. 15 pts. 1 - 2 min 10 pts 2 - 3 min.. 5 pts.

ANSWER - QUESTION #3:_____

3. A book is to have 250 pages that will be numbered with Hindu-Arabic numerals (our system). How many times will the digit "2" be used in numbering these pages?

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SCHOOL BOWL - THETA DIVISION STUDENT ID NUMBER:_____
TEAM ROUND II CALCULATOR

TIME: CIRCLE ONE 0- 1 min. 15 pts. 1 - 2 min 10 pts 2 - 3 min.. 5 pts.

ANSWER - QUESTION #4:_____

4. Consider the lines m and n where line m is $3x + 4y + 2 = 0$ and line n is $5x - 2y - 7 = 0$. If a is the slope of line m, b is the y-intercept of line m, c is the slope of line n, and d is the y-intercept of line n, then find: $\frac{b(c-d)}{a}$

MU ALPHA THETA - MAINE '95 NAME:_____

SCHOOL BOWL - THETA DIVISION STUDENT ID NUMBER:_____
TEAM ROUND III CALCULATOR

TIME: CIRCLE ONE 0- 2 mins. 20 pts. 2 - 3 mins 10 pts 3 - 4 mins. 5 pts.

ANSWER - QUESTION #1:_____

1. Find the smallest positive rational number that will result in a positive integer when divided by each of the following: $\frac{12}{35}, \frac{28}{45}, \frac{21}{55}$

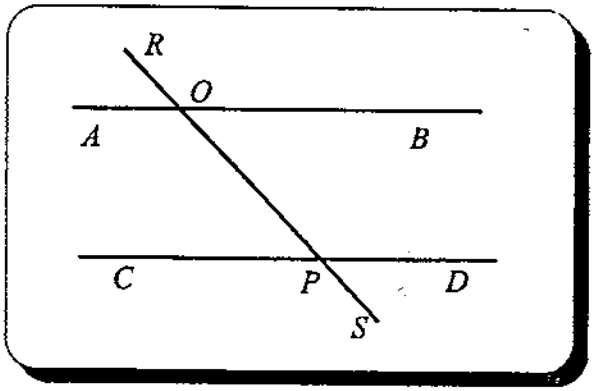
MU ALPHA THETA - MAINE '95 NAME:_____

SCHOOL BOWL - THETA DIVISION STUDENT ID NUMBER:_____
TEAM ROUND III CALCULATOR

TIME: CIRCLE ONE 0- 2 mins. 20 pts. 2 - 3 mins 10 pts 3 - 4 mins. 5 pts.

ANSWER - QUESTION #2:_____

2. Given $\overline{AB} \| \overline{CD}, m\angle BOR = (4y+15)^\circ, m\angle DPS = (2y+9)^\circ$. Find m$\angle AOP$ in degrees .



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SCHOOL BOWL - THETA DIVISION STUDENT ID NUMBER:_____
TEAM ROUND III CALCULATOR

TIME: CIRCLE ONE 0- 2 mins. 20 pts. 2 - 3 mins 10 pts 3 - 4 mins. 5 pts.

ANSWER - QUESTION #1:_____

3. What is the ordered pair of real numbers (x,y) for which x + y = 200 and $x^2 - y^2 = 200$?

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TEAM ROUND III CALCULATOR

TIME: CIRCLE ONE 0- 2 mins. 20 pts. 2 - 3 mins 10 pts 3 - 4 mins. 5 pts.

ANSWER - QUESTION #4:_____

4. Find x where x > 0 and $\left(\sqrt[4]{16x^8}\sqrt{4} \right)^3 = 4^{\frac{1}{16} - \frac{11}{16x}}$

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SCHOOL BOWL - THETA DIVISION STUDENT ID NUMBER:_____
TEAM ROUND IV CALCULATOR

TIME: CIRCLE ONE 0- 3 mins. 25 pts. 3 - 4 mins 15 pts 4 - 5 mins. 10 pts.

ANSWER - QUESTION #1:_____

1. One million seconds is equal to a-days, b-hours, c-minutes, and d-seconds. Find the value of a + b + c + d.

MU ALPHA THETA - MAINE '95 NAME:_____

SCHOOL BOWL - THETA DIVISION STUDENT ID NUMBER:_____
TEAM ROUND IV CALCULATOR

TIME: CIRCLE ONE 0- 3 mins. 25 pts. 3 - 4 mins 15 pts 4 - 5 mins. 10 pts.

ANSWER - QUESTION #2:_____

2. If the solution of $|x - a| > 8$ is $x < b$ or $x > 7$, find a and b. State your answer as an order pair (a,b).

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SCHOOL BOWL - THETA DIVISION STUDENT ID NUMBER:_____
TEAM ROUND IV CALCULATOR

TIME: CIRCLE ONE 0- 3 mins. 25 pts. 3 - 4 mins 15 pts 4 - 5 mins. 10 pts.

ANSWER - QUESTION #3:_____

3. Find the greatest common factor of $x^3+3x^2-4x-12, x^3-2x^2-11x+12, x^3-7x+6$

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TEAM ROUND IV CALCULATOR

TIME: CIRCLE ONE 0- 3 mins. 25 pts. 3 - 4 mins 15 pts 4 - 5 mins. 10 pts.

ANSWER - QUESTION #4:_____

4. In the figure below, MN is a diameter, ABC and TCN are tangents. If m$\angle T$ is 40°, then find the measure of Angle BCT.