Meet 3
Jan. 1993

ANSWERS - MEET 3 - JANUARY 1993

CAT 1 - NUMBER THEORY

1. ~~73~~ 37
2. 360
3. 72

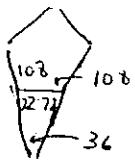
CAT 4 - ARITHMETIC

1. 49
2. 2
3. .6 $\quad \frac{1}{1.6} = \frac{1}{1\frac{2}{3}} = \frac{1}{\frac{5}{3}}$

MUST BE IN DECIMAL FORM

CAT 2 - GEOMETRY

1. 6
2. 30
3. 36



CAT 5 - ALGEBRA

1. $\{2, -8\}$
2. $\{-4, -3, -2, -1, 1, 2, 3, 4\}$ No ze
3. 2

CAT 3 - MYSTERY

1. 7
2. 24
3. 38

CAT 6 - TEAM

1 A = 5 (PM)
2 B = 22,100 (5525 x 4)
3 C = #12
4 D = 3
5 E = 1
6 F = 123

Team Advisors:

Please note new location for answers as well as increase work space on test pages. Send comments to Carol Clarke (League President), Memorial Middle School, Beverly, MA 01915

Reminder: Calculators for ~~meet~~ 4

CATEGORY 1 — NUMBER THEORY — JANUARY, 1993

1. A NUMBER HAS THE PROPERTY THAT WHEN IT IS DIVIDED BY EITHER 12 OR 18 THE REMAINDER IS ONE. WHAT IS THE SMALLEST WHOLE NUMBER GREATER THAN ONE THAT HAS THIS PROPERTY?

2. FIND THE LEAST COMMON MULTIPLE OF THE COMPOSITE NUMBERS BETWEEN 7 AND 13.

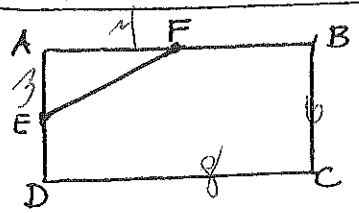
3. TWO NUMBERS HAVE A GCF OF 18 AND A LCM OF 120. IF ONE NUMBER IS 90, WHAT IS THE OTHER?

1. _____

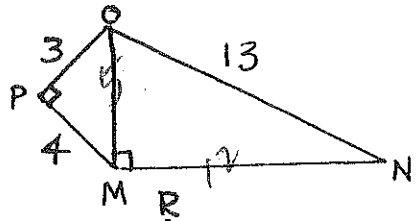
2. _____

3. _____

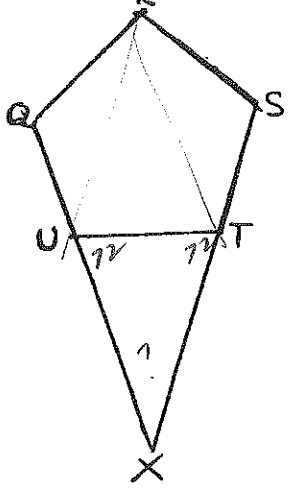
CATEGORY 2 — GEOMETRY — JANUARY, 1993

1. 

F IS THE MIDPOINT OF $\overline{AB}$ AND E IS THE MIDPOINT OF $\overline{AD}$. IF THE AREA OF RECTANGLE ABCD IS 48 SQ UNITS WHAT IS THE AREA OF TRIANGLE AEF?

2. 

FIND THE AREA OF TRIANGLE MON.

3. 

IF RSTUQ IS A REGULAR PENTAGON WHAT IS THE MEASURE OF ANGLE UXT?

1	SQ. UN.
2	SQ. UN.
3	°

CATEGORY 3 ~ MYSTERY ~ JANUARY 1993

1. 3AA1 IS A FOUR DIGIT NUMBER WHICH IS DIVISIBLE BY 9. WHAT IS THE VALUE OF A?

2. IF YOU BOUGHT 3 APPLES FOR 25¢ AND SOLD THEM AT 2 FOR 25¢ HOW MANY APPLES WOULD YOU NEED TO SELL IN ORDER TO MAKE A PROFIT OF ONE DOLLAR

3. A AND B ARE TWO DIFFERENT DIGITS. WHAT 2-DIGIT NUMBER IS REPRESENTED BY AB IF:

$$\begin{array}{r} AB \\ \times\ BA \\ \hline 114 \\ 304 \\ \hline 3154 \end{array}$$

1. _____

2. _____

3. _____

CATEGORY 4 ~ ARITHMETIC ~ JANUARY 1993

1) $\frac{10}{14} = \sqrt{\frac{25}{?}}$

2) SIMPLIFY: $\sqrt[4]{\sqrt{121} + \sqrt[3]{125}}$

3) SIMPLIFY AND EXPRESS YOUR ANSWER IN <u>DECIMAL FORM</u>

$$\frac{1}{1 + .\overline{1} + .\overline{2} + .\overline{3}}$$

1. _____

2. _____

3. _____

CATEGORY 5 ~ ALGEBRA ~ JANUARY 1993

1.) SOLVE FOR m $|2m+6| = 10$

2.) NAME THE SET OF INTEGERS THAT WILL SATISFY THE INEQUALITY

$$\left|\frac{17}{\square}\right| \geq 4$$

3) IF $\frac{3}{10} = \frac{x+5}{100}$ AND $a+8 = \frac{a}{5}$ AND $\frac{x}{a} = \frac{y+3}{y-4}$

SOLVE FOR y

1. { }

2 { }

3 $y =$

CATEGORY 6 ~ TEAM QUESTIONS ~ JANUARY 1993

1) A CLOCK LOSES 15 MINUTES EVERY HOUR. IF THE CLOCK IS SET TO THE CORRECT TIME AT 9 AM, WHAT WILL BE THE CORRECT TIME WHEN THE CLOCK FIRST READS 3 O'CLOCK?

2) IF $1^2 + 2^2 + 3^2 + 4^2 \ldots + 25^2 = 5525$
FIND THE SUM OF $2^2 + 4^2 + 6^2 + 8^2 \ldots + 50^2$

3) THE COST OF 3 CASSETTES IS THE SAME AS 2 CD'S IF 6 CASSETTES AND 3 CD'S COST #84, WHAT IS THE PRICE OF ONE CD?

4) WHAT IS THE ONES DIGIT IN 3^{1993}?

5) WHAT DIGIT IS 1993 PLACES TO THE RIGHT OF THE DECIMAL POINT IN THE DECIMAL NOTATION FOR $1/7$?

6) $$\frac{D(CF-D)+E}{B} = \frac{E}{A}$$

1. A = (PM)
2. B =
3. C = #
4. D =
5. E =
6. F =