

TEAM QUESTION #1

- A = SMALLEST POSSIBLE MEASURE FOR AN INTERIOR ANGLE OF A
REGULAR POLYGON
B = SMALLEST POSSIBLE MEASURE FOR AN OBTUSE ANGLE OF A
REGULAR POLYGON
C = B - A

FIND $\frac{A(B - C)}{3|A - B|} + \frac{(A + C)}{B}$

ANSWER: _____

TEAM QUESTION #2

A surveyor recorded the following data on a survey map of a pentagonal piece of property, pentagon ABCDE.

$m\angle A = 104$; $AB = 23.1$ yds.; $m\angle B = 142$; $BC = 38.5$ yds.; $m\angle C = 80$; $CD = 58.5$ yds.; $m\angle D = 76$; $DE = 42.3$ yds.; $m\angle E = 136$; $EA = 27.7$ yds.

Find the error in the data (write a complete sentence).

ANSWER: _____

TEAM QUESTION #3

- A = NUMBER OF DIAGONALS IN A HEPTAGON
- B = NUMBER OF SIDES IN AN ICOSAGON
- C = NUMBER OF INTERIOR ANGLES IN A DODECAGON

FIND $\frac{AB - C^2}{\frac{1}{3}C}$

ANSWER: _____

TEAM QUESTION #4

The following statements are true or false. Use a 0 for false and a 1 for true, and fill in the blanks below.

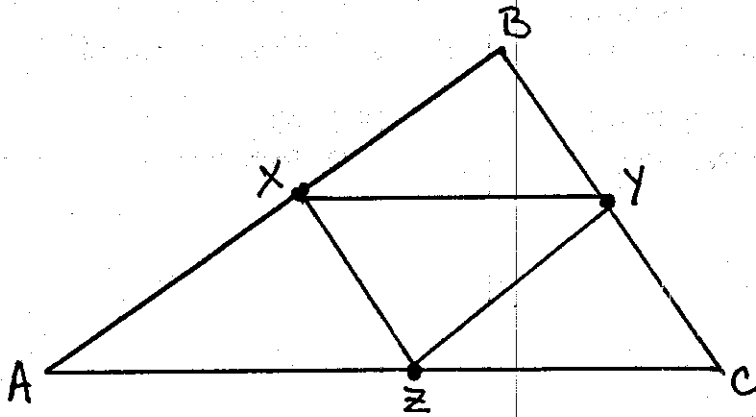
- A: Every parallelogram is a quadrilateral
- B: Some rectangles have no congruent angles
- C: No trapezoids are rectangles
- D: Every trapezoid is a convex polygon

Convert: $\frac{B}{D} \frac{A}{C}$ (base two) to base 10

ANSWER: _____

TEAM QUESTION #5

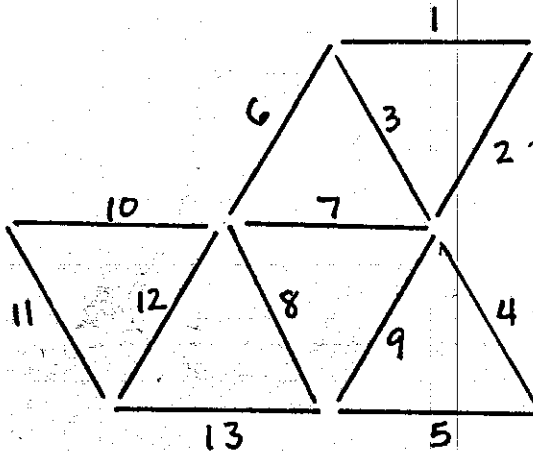
POINTS X, Y & Z ARE MIDPOINTS AS SHOWN IN THE FIGURE. IF $XY = 2x+4$, $AZ = y$ AND $ZC = y + 4x$, FIND THE PRODUCT OF AC, x & y.



ANSWER: _____

TEAM QUESTION #6

THE PICTURE SHOWS 13 TOOTHPICKS ARRANGED TO SHOW SIX TRIANGLES. WHICH 3 TOOTHPICKS CAN BE REMOVED SO THAT THE REMAINING TOOTHPICKS SHOW 3 TRIANGLES?



ANSWER: _____

TEAM QUESTION #7

IF AN ANSWER IS TRUE GIVE IT A VALUE OF 1; IF FALSE, GIVE IT A VALUE OF 0.
WHEN DONE CONVERT THE BINARY NUMBER OBTAINED FROM THE ANSWERS
TO THE FOLLOWING QUESTIONS TO BASE 10.

- A. THE MEASURE OF AN ANGLE THAT IS 50 MORE THAN ITS
COMPLEMENT IS 80 DEGREES.
- B. TWO LINES THAT FORM VERTICAL ANGLES ALSO FORM ADJACENT
ANGLES.
- C. POSTULATES ARE STATEMENTS TO BE PROVED.
- D. TWO LINES CAN INTERSECT IN EXACTLY ONE POINT.

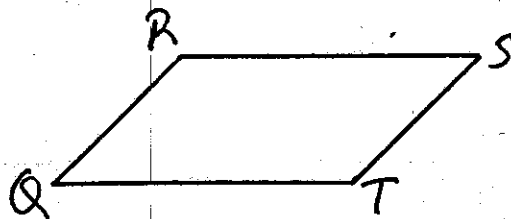
A B C D

ANSWER: _____

TEAM QUESTION #8

FIND THE VALUES OF x AND y THAT MAKE QRST A PARALLELOGRAM. THEN
TAKE THE DIFFERENCE OF x AND y AND SQUARE IT FOR THE ANSWER.

$TS = 4x + 9$ $SR = 2y + 6$ $QR = 2x + 37$ $TQ = 3y$



ANSWER: _____

TEAM QUESTION #9

FIND THE NUMBER OF SQUARES IN A 12 X 12 CHECKERBOARD PATTERN.

ANSWER: _____

TEAM QUESTION #10

IN A PLANE, HOW MANY PERPENDICULARS ARE THERE TO A GIVEN LINE AT A POINT ON THE LINE?

ANSWER: _____

TEAM QUESTION #11

$$P = |4 - (-4)|$$

$$R = P(3) \div 4$$

$$S = [(R + P)/2] + 3$$

$$Q = (P + S)/6$$

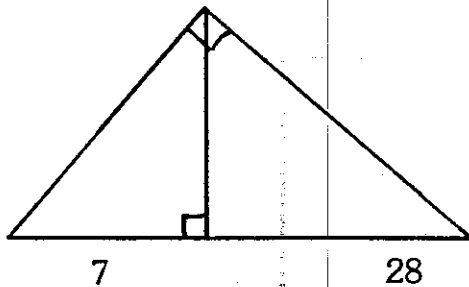
$$T = (P)(R) + S$$

FIND $QT\Pi$ (leave in terms of Π)

ANSWER: _____

TEAM QUESTION #12

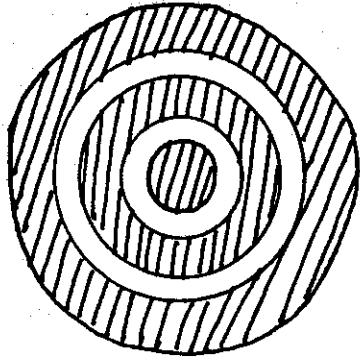
FIND THE SUM OF THE PERIMETER AND AREA OF THIS RIGHT TRIANGLE WITH LENGTHS SHOWN.



ANSWER: _____

TEAM QUESTION #13

GIVEN THIS BULLSEYE PRACTICE TARGET OF CONCENTRIC CIRCLES, FIND THE TOTAL SHADED AREA (IN TERMS OF π) IF EACH BAND, WHITE OR SHADED, IS 4 CM WIDE AND THE MIDDLE CIRCLE HAS A DIAMETER OF 6 CM.



ANSWER: _____

TEAM QUESTION #14

LET A = SET OF MONTHS WHOSE NAMES BEGIN WITH "J"

LET B = SET OF MONTHS WITH EXACTLY 30 DAYS

LET C = SET OF MONTHS WHOSE NAMES BEGIN WITH "F"

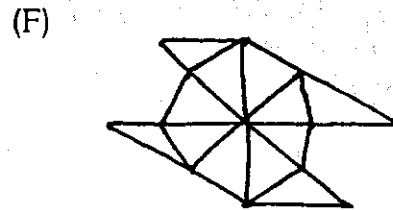
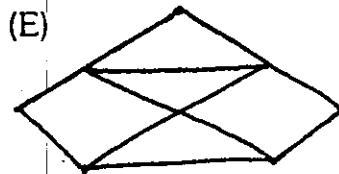
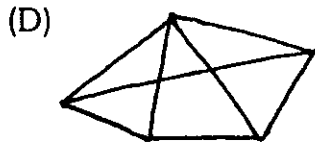
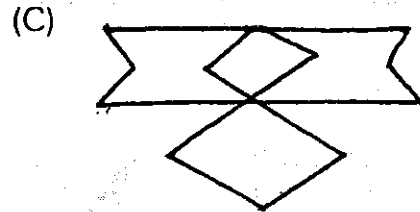
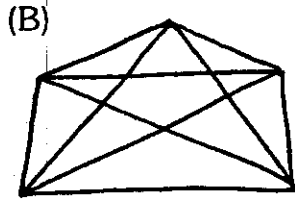
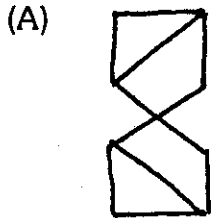
FIND $n(A \cup C) - n(B)$

(n = # of elements in a set)

ANSWER: _____

TEAM QUESTION #15

OF THE FOLLOWING FIGURES, IF IT IS POSSIBLE TO DRAW THE FIGURE WITHOUT RETRACING ANY LINE SEGMENT, GIVE IT A VALUE OF "1". IF NOT POSSIBLE, GIVE IT A VALUE OF "0". CONVERT THE NUMBER ACHIEVED TO BASE 10.



C D B E A F

ANSWER: _____