MATH LEAGUE 4TH WEEK SOLUTIONS:

1-

CALCULATING X+Y

CALCULATING X:

WE KNOW THAT 65°+SRQ=180° SO **SRQ=115°**

WE KNOW THAT THE SUM OF ANGLES IN A TRIANLE IS 180°:

RSQ+SRQ+RQS=180°
RSQ=180°-SRQ-RQS
RSQ=180°-28°-115°
RSQ=37°

AND SINCE (SR) AND (PQ) ARE PARRARREL LINES WE GET

X=QSR=37°

CALCULATING Y:

Y+QSR=90° SO Y=90°-37° THEN Y=53°

X+Y=53°+37°=90°

CALCULATING A+B+C

__LET THE LENGH OF THE SIDE OF EVERY SQUARE BE X

The triangle EFD is right and has two equal sides then

C=45°
WE HAVE GED AND HDE ARE RGHT TRIANGLES AND

DE=X ، GE=2X، HE=3X

SO WE GET

TAN A=X/3X=1/3   ، TAN B =X/2X=1/2

$$B=26.5°\qquad A=18.26°$$

$$A+B+C=45°+26.5°+18.26°$$

$$\underline{A+B+C=89.76°}$$

3-

FINDING X:

WE KNOW THAT THE SUM OF ANGLES IN A TRIANLE IS 180°
ACB=180°-2X

WE CAN SEE THAT: 2X=DCB

AND BECAUSE CDB AND ADB ARE ISOSCELES TRIANGLES WE FIND:

CDB=2X=DCB
ADB=ABD-2X

WE KNOW THAT THE SUM OF ANGLES IN A TRIANLE IS 180° THEN;

ADB+ABD+DAB=180°
2X+2X+X=180°
5X=180°
X=180/5
X=36°