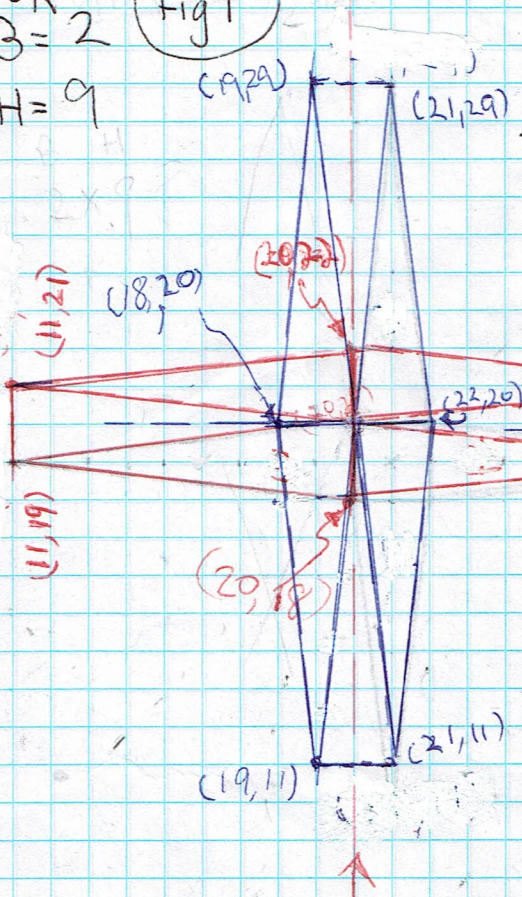


FOR
B=2
H=9

Fig 1



Area of triangle = $\frac{1}{2} \times B \times H$
Isosceles Triangles

Reflections
Mirror line of the six blue triangles

Fig 2

for
B=18 H=1

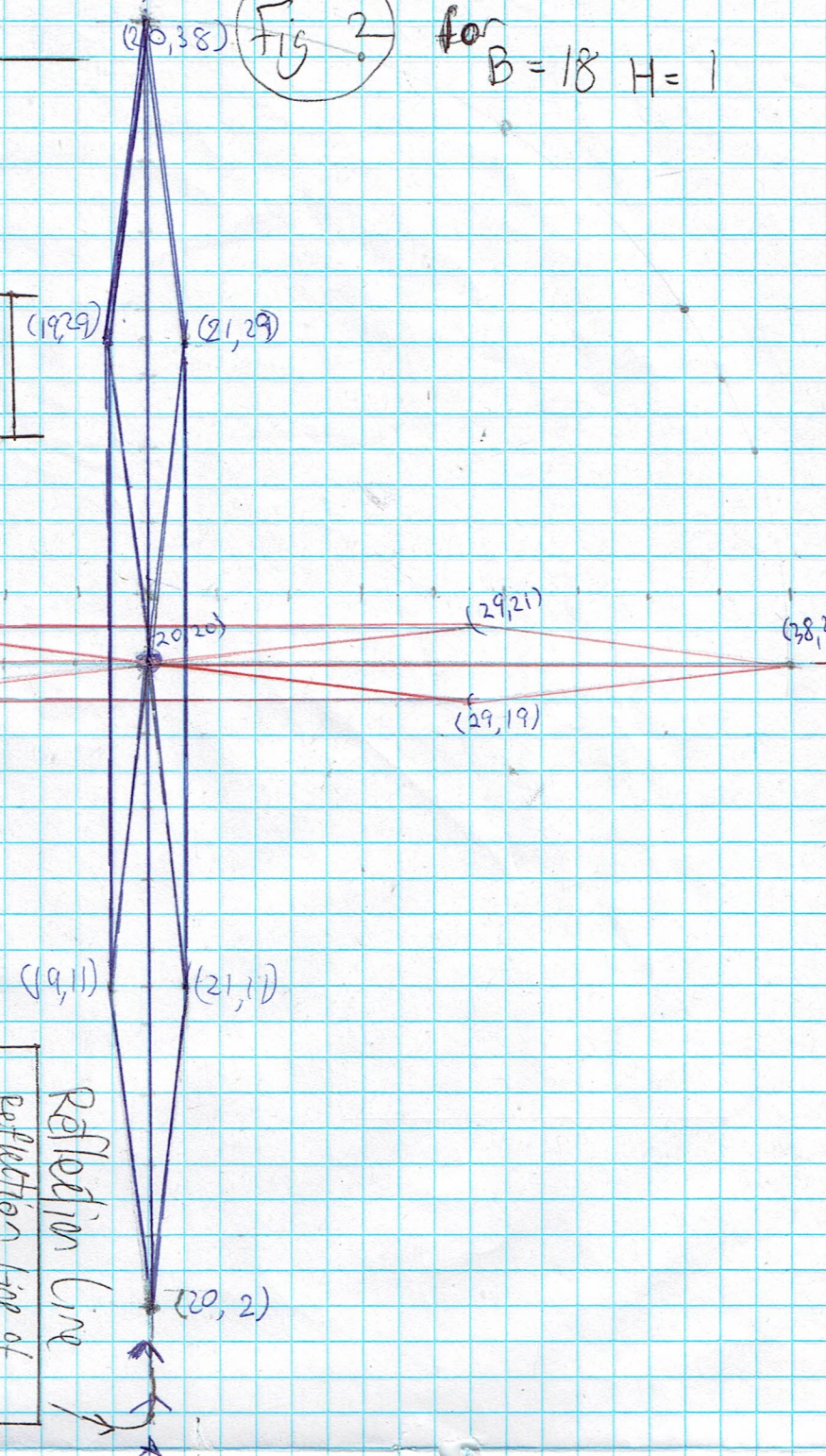


Fig 3 for
B=6 H=3

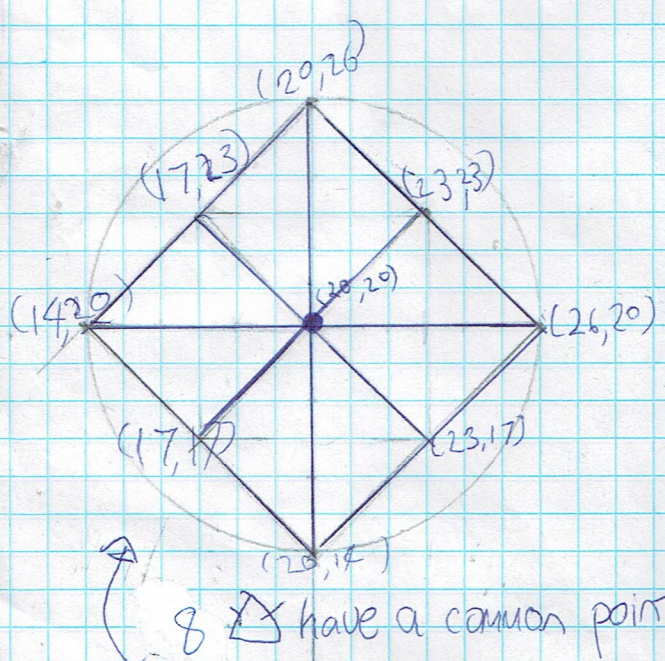
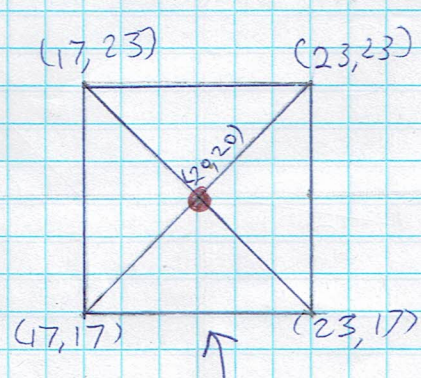


Fig 4
B=6 H=3



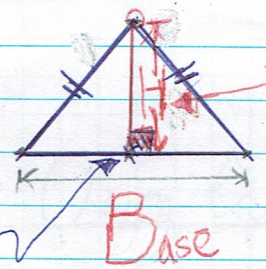
8 triangles have a common point of base (20,20)

4 triangles have a common point (vertex) (20,20)

Conclusions
 $12 \times 3 = 36$
 Total: 36 triangles that satisfy the conditions.

- (1) All vertices coordinates are whole no.
- (2) One vertex must be (20,20)
- (3) The area need to be 9 units²

(1) for isosceles triangles



Height is always measured at the base to the vertex

Reasonings

Centre of B

(2) Area of triangle = $\frac{1}{2} \times B \times H$

Area = 9 means $B \times H = 18$ Factor of 18:

1, 2, 3, 6, 9, 18 ONLY 2, 6 and 18 can be divided into half
 $\therefore B = 2, 6, 18$. Then the coordinates of vertices will be a whole no.

Ong Cat Luy Minh Ngoc, Age 10, Grade 6
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