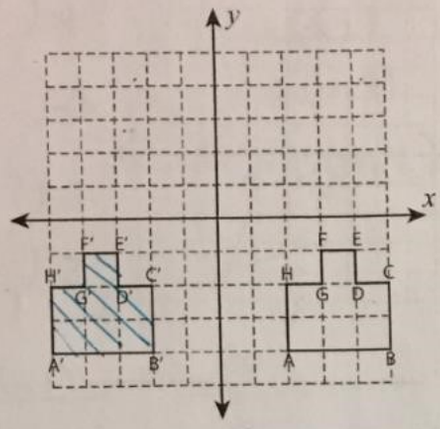
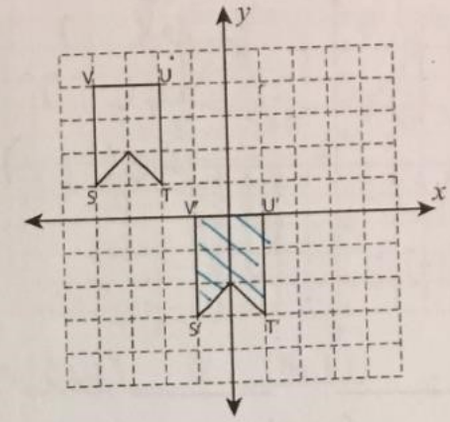
Write a rule to describe each translation.

1)



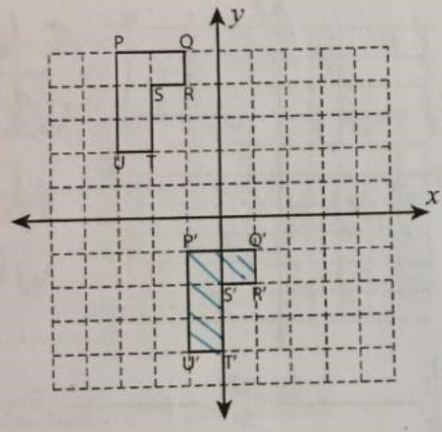
L7

2)



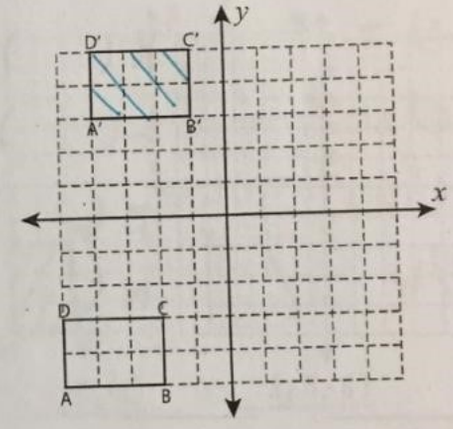
R3 D4

3)



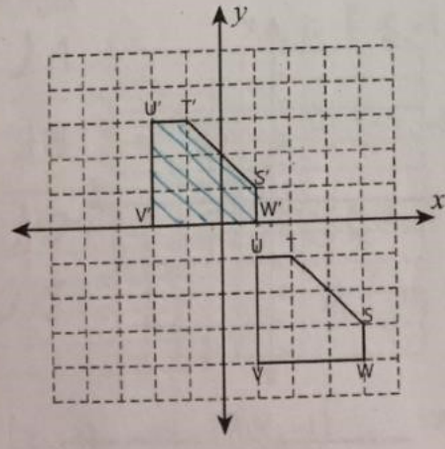
R2 D6

4)



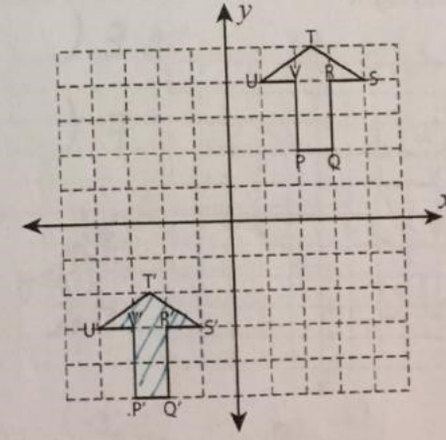
R1 U8

5)



L3 U4

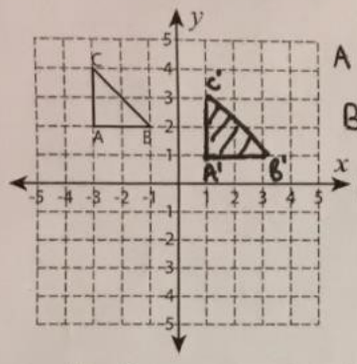
6)



L5 D7

Graph the image of each figure after the given translation. Also write the coordinates of the image.

1) 1 unit down and 4 units right

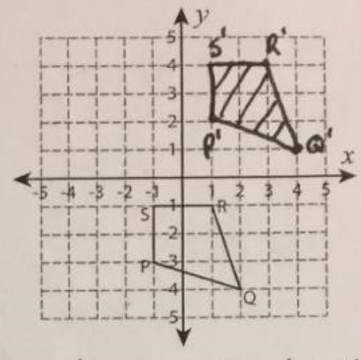


A (-3, 2)
B (-1, 2)
C (-3, 4)

A′: (1, 1) , B′: (3, 1)

C′: (1, 3)

2) 2 units right and 5 units up

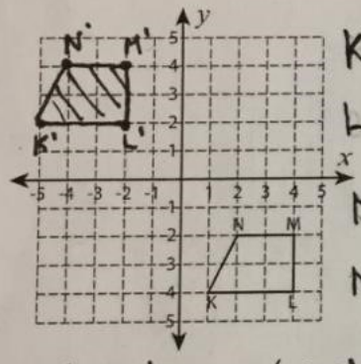


P (-1, -3)
Q (2, -4)
R (1, -1)
S (-1, -1)

P′: (1, 2) , Q′: (4, 1)

R′: (3, 4) , S′: (1, 4)

3) 6 units up and 6 units left

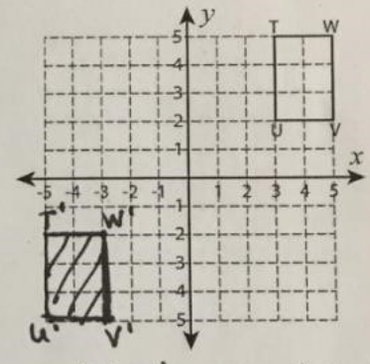


K (1, -4)
L (4, -4)
M (4, -2)
N (2, -2)

K′: (-5, 2) , L′: (-2, 2)

M′: (-2, 4) , N′: (-4, 4)

4) 8 units left and 7 units down

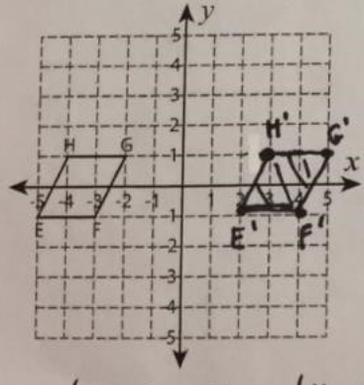


T (3, 5)
U (3, 2)
V (5, 2)
W (5, 5)

T′: (-5, -2) , U′: (-5, -5)

V′: (-3, -5) , W′: (-3, -2)

5) 7 units right

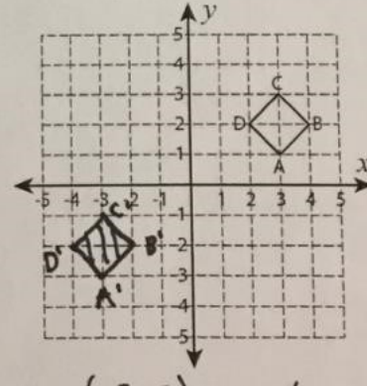


E (-5, -1)
F (-3, -1)
G (-2, 1)
H (-4, 1)

E′: (2, -1) , F′: (4, -1)

G′: (5, 1) , H′: (3, 1)

6) 4 units down and 6 units left



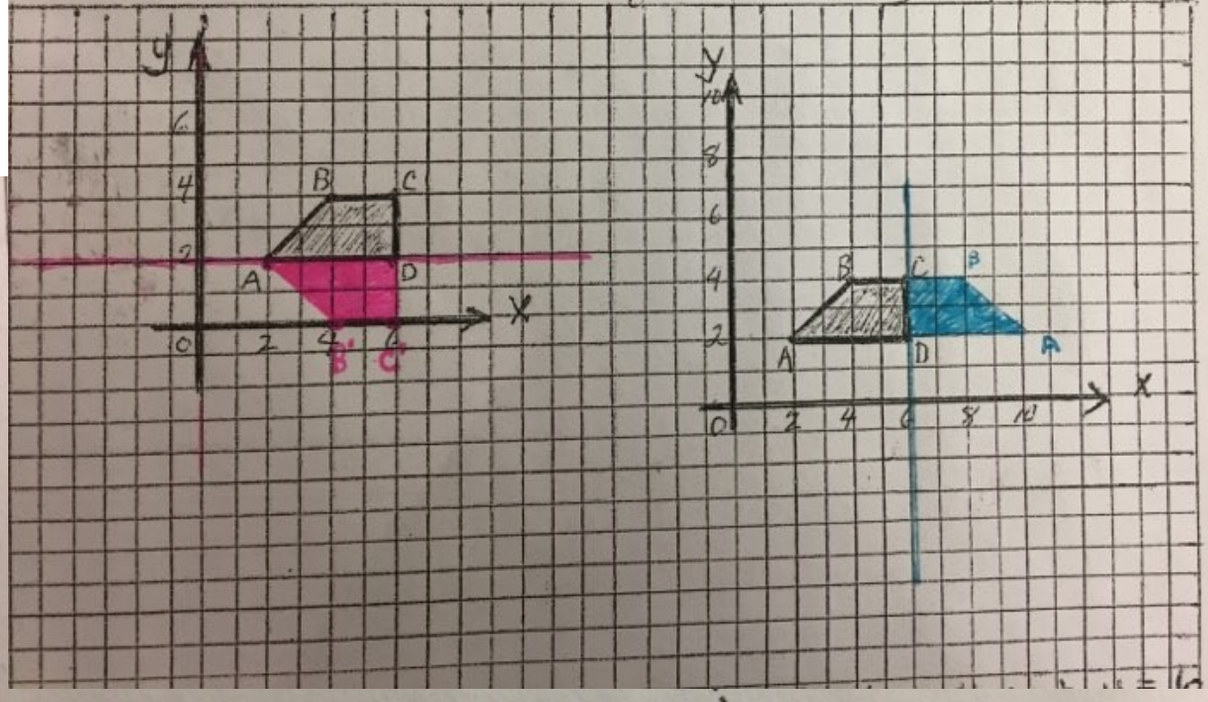
A (3, 1)
B (4, 2)
C (3, 3)
D (2, 2)

A′: (-3, -3) , B′: (-2, -2)

C′: (-3, -1) , D′: (-4, -2)

Draw the image after each reflection
Write the coordinates of ABCD and its image
Describe the larger shape and its symmetry

a) reflection in horizontal line through 2 on the y-axis
b) reflection in the vertical line through 6 on the x-axis
c) a reflection in an oblique line through (0,0) and (6,6)



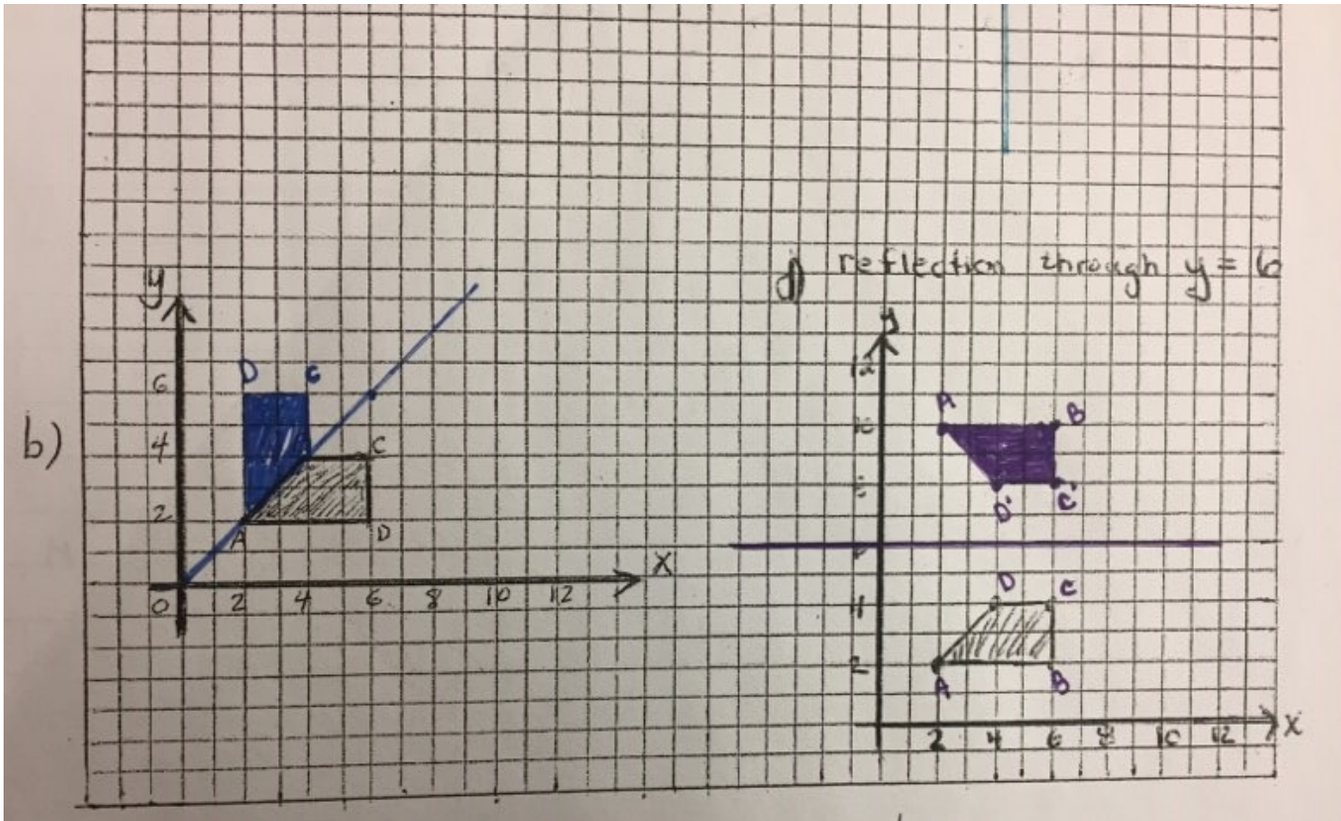
c)

a)

Point	Image
A (2,2)	A (2,2)
B (4,4)	B' (4,0)
C (6,4)	C' (6,0)
D (4,2)	D (4,2)

b)

Point	Image
A (2,2)	A' (10,2)
B (4,2)	B' (8,4)
C (6,4)	C' (6,4)
D (4,2)	D' (6,2)



a)

b)

Point	Image
A (2, 2)	A'(2, 2)
B (4, 2)	B'(4, 2)
C (6, 4)	C'(4, 6)
D (4, 2)	D'(2, 6)

c)

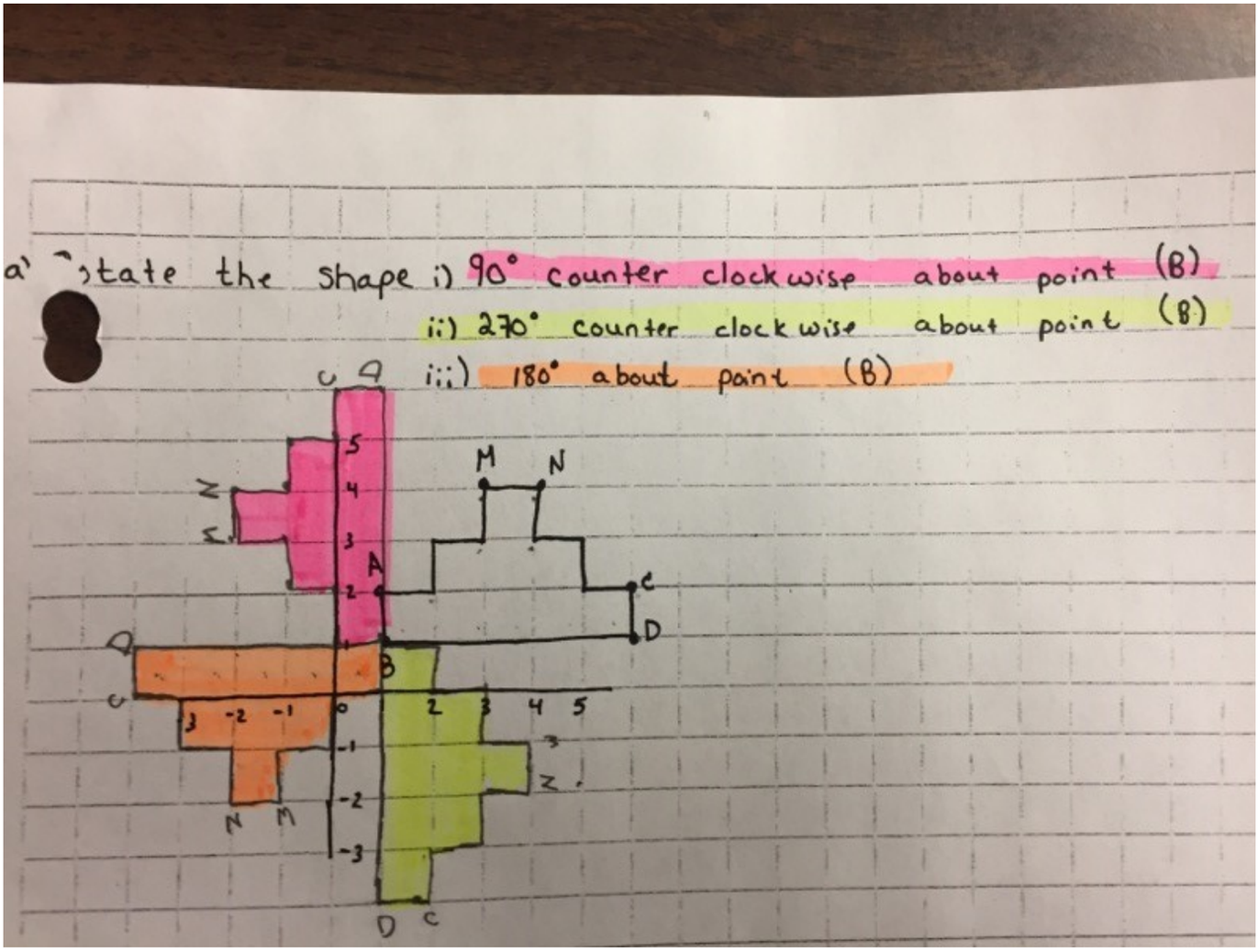
Point	Image
A(2, 2)	A'(2, 10)
B(4, 2)	B'(6, 10)
C (6, 4)	C'(6, 8)
D (4, 2)	D'(4, 8)

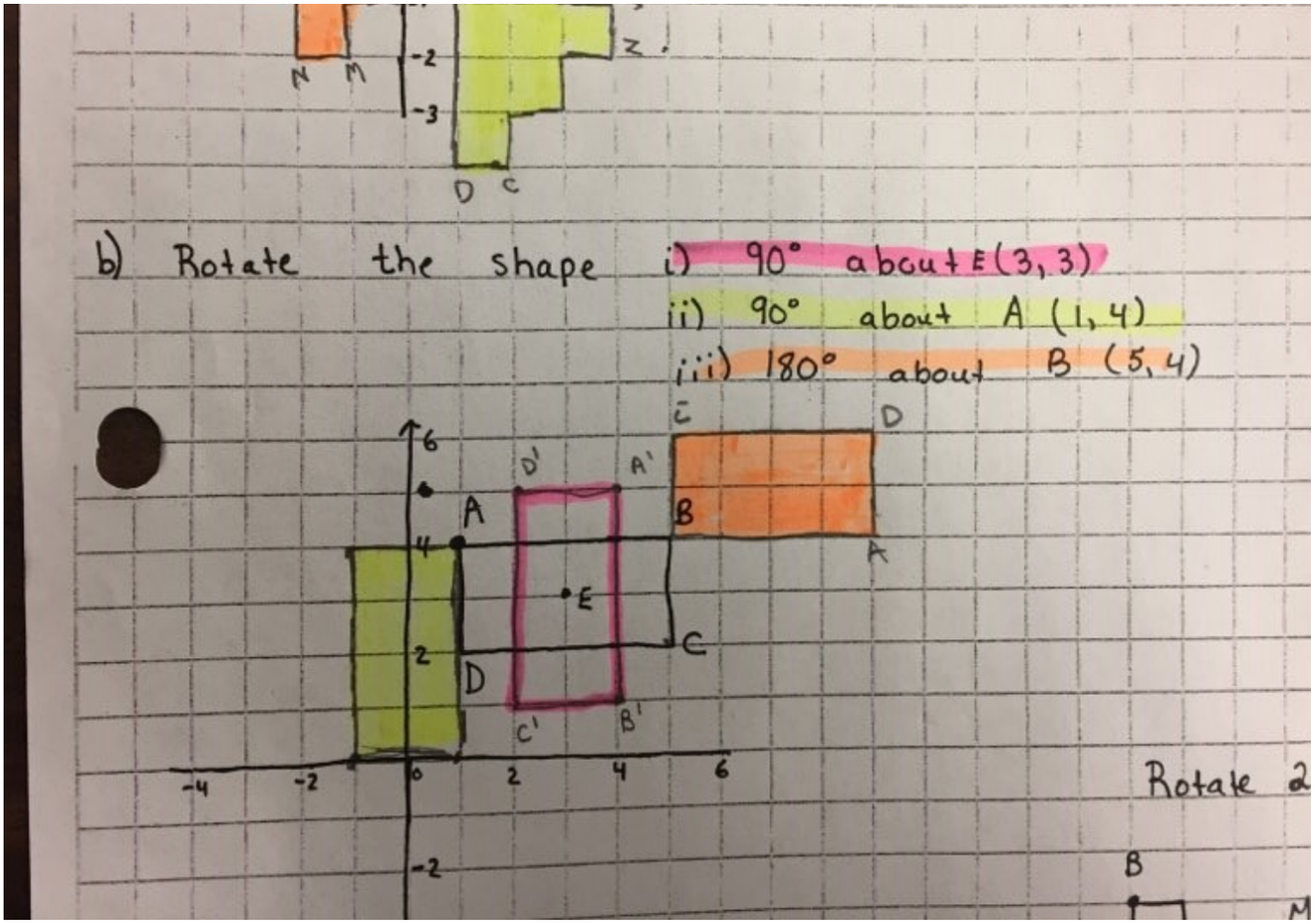
d)

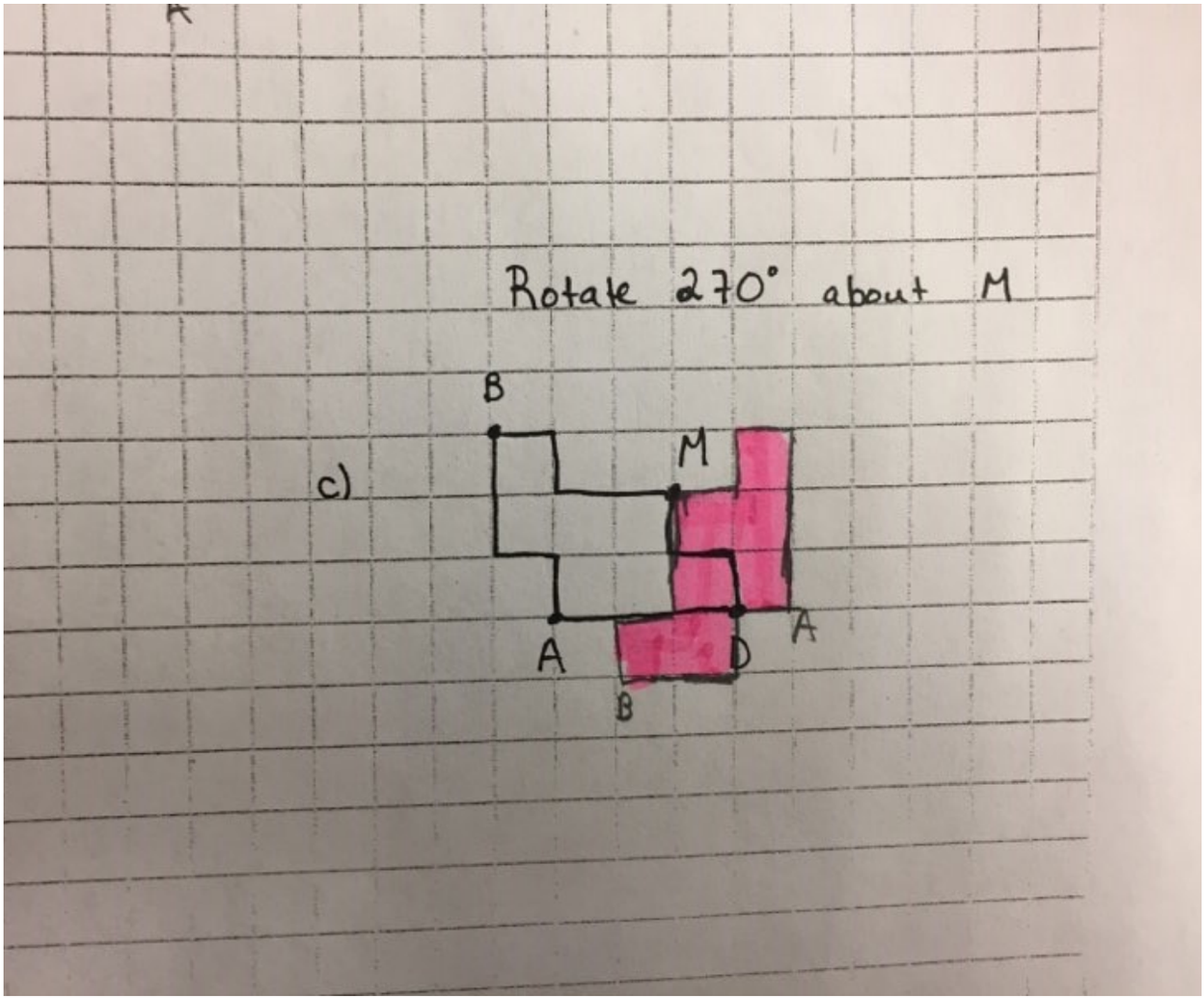
a) State the shape i) 90° counter clockwise about point (B)

ii) 270° counter clockwise about point (B)

iii) 180° about point (B)




N
M
-2
-3
Z
D
C
b) Rotate the shape i) 90° about E (3, 3)
ii) 90° about A (1, 4)
iii) 180° about B (5, 4)
C
D
A'
D'
B
A
E
C
D
C'
B'
6
4
2
-2
-4
-2
0
2
4
6
Rotate 2
B


Rotate 270° about M
c)
B
M
A
D
A
B