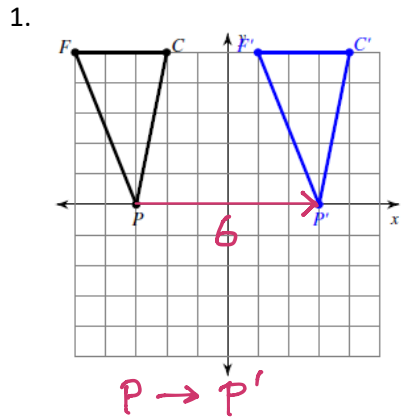


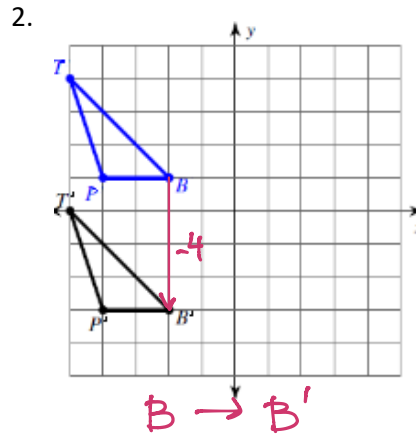
## Translation Rules

#1-6 Describe in words and write a rule for the transformation that has occurred.



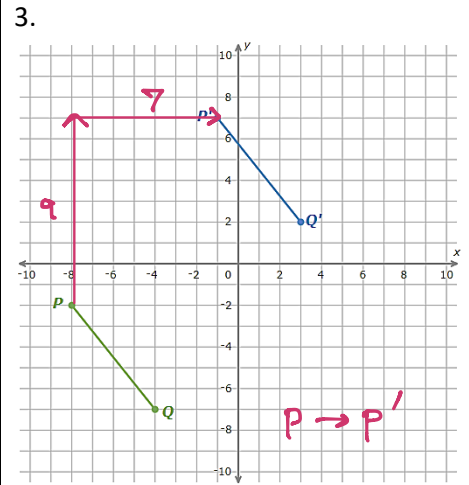
Words: translate right 6

Rule:  $(x+6, y)$



Words: translate down 4

Rule:  $(x, y-4)$



Words: translate up 9, right 7

Rule:  $(x+7, y+9)$

4.

Pre-image	Image
(4, 7)	(-4, 7)
(1, -5)	(-7, -5)
(-2, 1)	(-10, 1)

Words: translate left 8

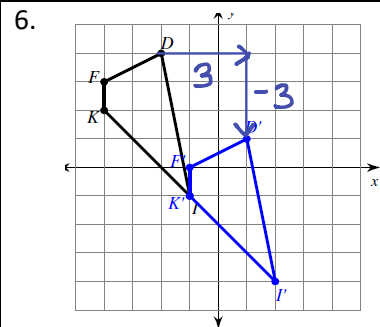
Rule:  $(x, y) \rightarrow (x-8, y)$

5.

Pre-image	Image
(4, 7)	(9, -2)
(1, -5)	(6, -14)
(-2, 1)	(3, -8)

Words: translate right 5, down 9

Rule:  $(x, y) \rightarrow (x+5, y-9)$



Words: translate right 3, down 3

Rule:  $(x, y) \rightarrow (x+3, y-3)$

#7- 12 Describe in words the translation that is being performed?

7.  $(x+4, y)$   
translate right 4

8.  $(x, y-2)$   
translate down 2

9.  $(x-7, y)$   
translate left 7

10.  $(x, y+1)$   
translate up 1

11.  $(x-3, y+7)$   
translate left 3, up 7

12.  $(x+5, y-9)$   
translate right 5, down 9

#13- 18 Write the rule for the translation.

13. right 5 and up 3  
 $(x, y) \rightarrow (x+5, y+3)$

14. right 3 and down 1  
 $(x, y) \rightarrow (x+3, y-1)$

15. down 2  
 $(x, y) \rightarrow (x, y-2)$

16. left 6  
 $(x, y) \rightarrow (x-6, y)$

17. left 1 and up 8  
 $(x, y) \rightarrow (x-1, y+8)$

18. down 5 and left 4  
 $(x, y) \rightarrow (x-4, y-5)$