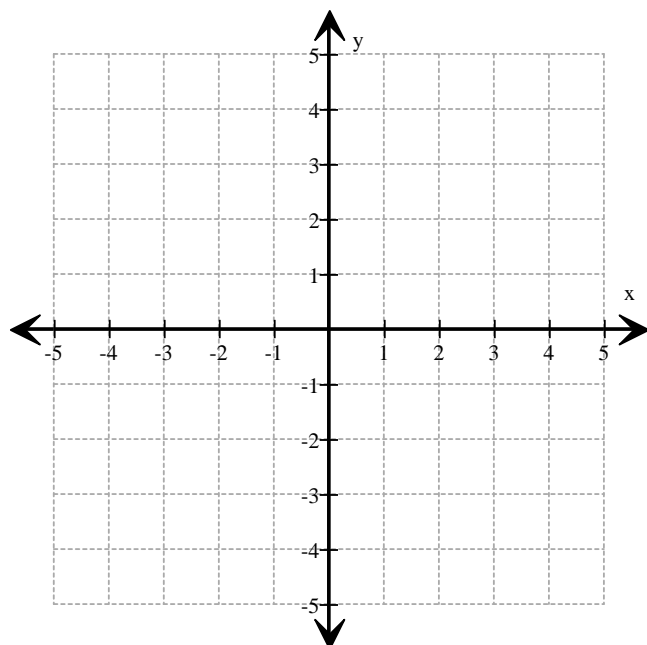


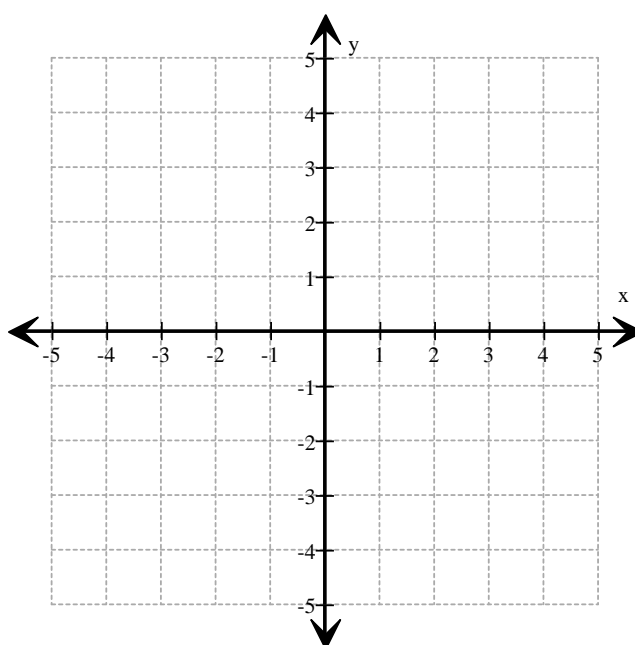
## MR12 Worksheet (graph and transformation of quadratic equation)

Use the graph to find the solution of the following:

1.  $y = x^2 - x - 2$



2.  $y = -x^2 - 3x + 4$



Describe how the following equations transformed from  $y = x^2$

3.  $y = x^2 - 5$

4.  $y = (x - 5)^2$

5.  $y = (x + 4)^2 - 6$

6.  $y = 3x^2$

7.  $y = \frac{1}{3}(x + 1)^2$

8.  $y = -2(x - 3)^2 + 7$

Write the quadratic equations under the specific transformations from  $y = x^2$

9. shift 1 unit to the right and 5 units down

10. shift 4 units to the left and 9 units up

11. vertical stretch by 2 and then reflect about the  $x$ -axis

12. reflect about the  $y$ -axis and then shift up 10 units