

**Assignment : Linear –Quadratic intersection**

Date : \_\_\_\_\_

- Find the points of intersection (if any) for  $y = -x + 6$  and  $y = -2x^2 + 3x - 2$ .
- Determine the points of intersection between the quadratic-linear system below. Draw a sketch to make sense of your answer.  $y = -(x+1)(x-7)$   $y = 3.5(x+2)$
- The equations below have the solution (1, 11). Determine the values of h and m. Draw a sketch to make sense of your answer.  $y_1 = 3(x-h)^2 + 8$   $y_2 = mx + 17$
- Determine the equations of the lines that have a slope of -6 and intersect the quadratic relation once, twice or never.  $y = 3x^2 + 6x - 7$
- A quadratic relation and a linear relation share the same y-intercept at -3. You also know that two other points on the parabola are (2, 1) and (4, -11), while another point on the line is (4, 9). Determine the equations of each in the form  $y = ax^2 + bx + c$  and  $y = mx + k$ .
- Determine the point(s) of intersection between the quadratic-quadratic system below. Draw a sketch to make sense of your answer.  $y = x^2 - 4x - 5$   $y = 3x^2 - 6x + 7$

Answers: 1. no solution; 2. (0,7) and (2.5,15.75); 3.  $h=0$  or  $h=2$ ,  $m=-6$ ; 4.  $y = -6x - 19$  has one solution,  $y\text{-int} > -19$  for two solutions,  $y\text{-int} < -19$  for no solution; 5.  $3x - 3$  and  $-2x^2 + 6x - 3$ ; 6. no solution