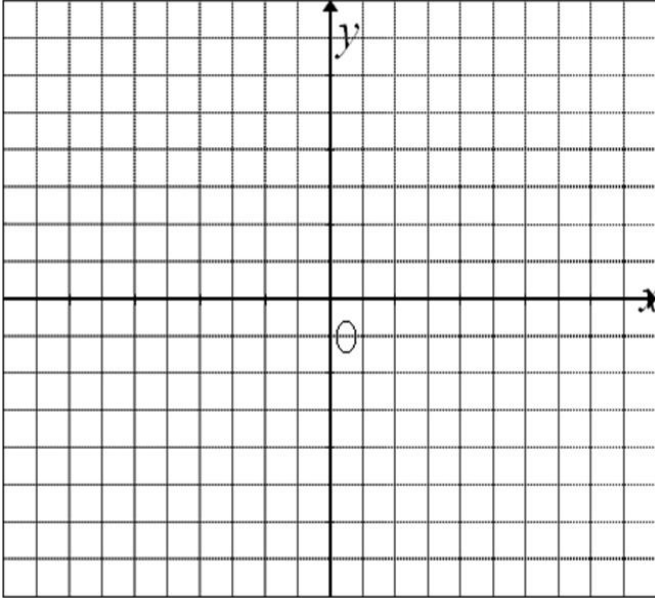


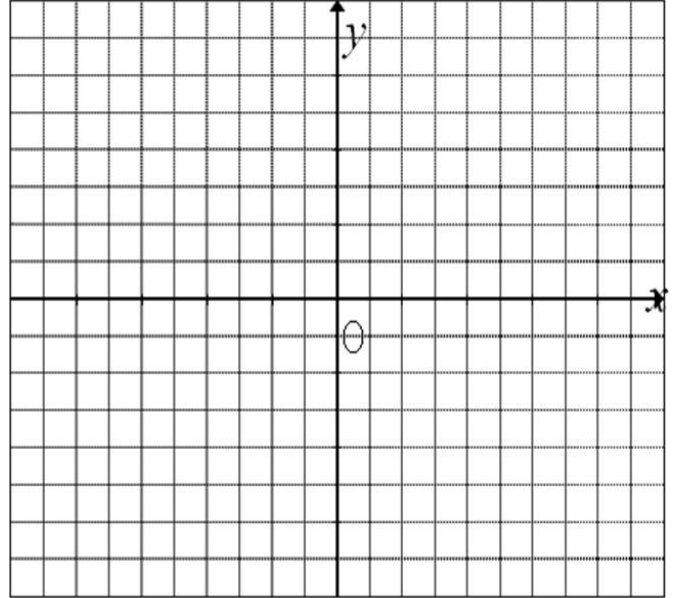
Pre Calculus 11: HW Section 9.3 Graphing Quadratic Inequalities on XY Plane

1. Graph each of the following inequalities and shade in the correct area:

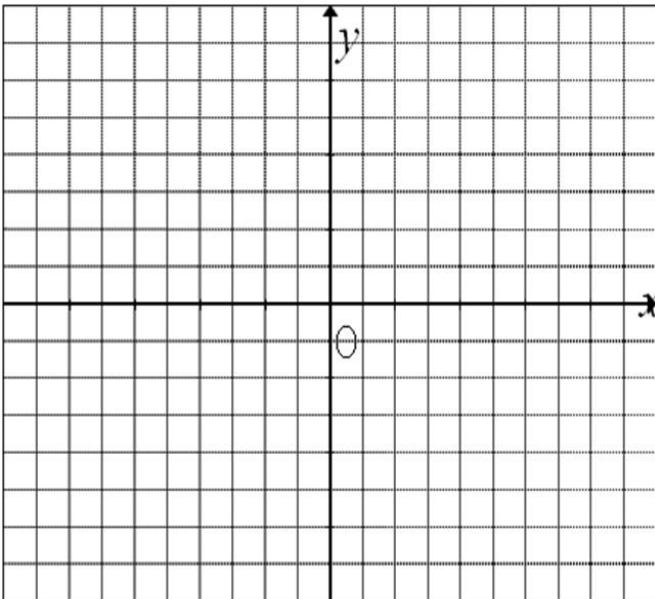
i) $y > (x-2)^2 - 7$



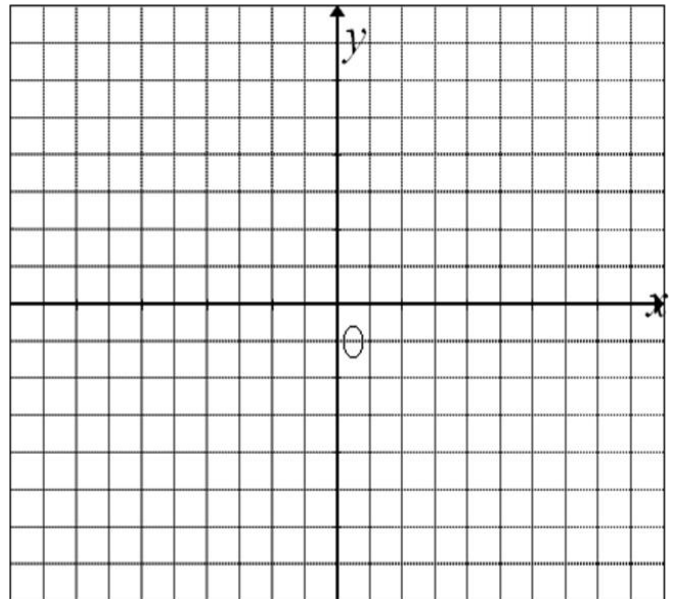
ii) $y \leq (x+5)^2 - 4$



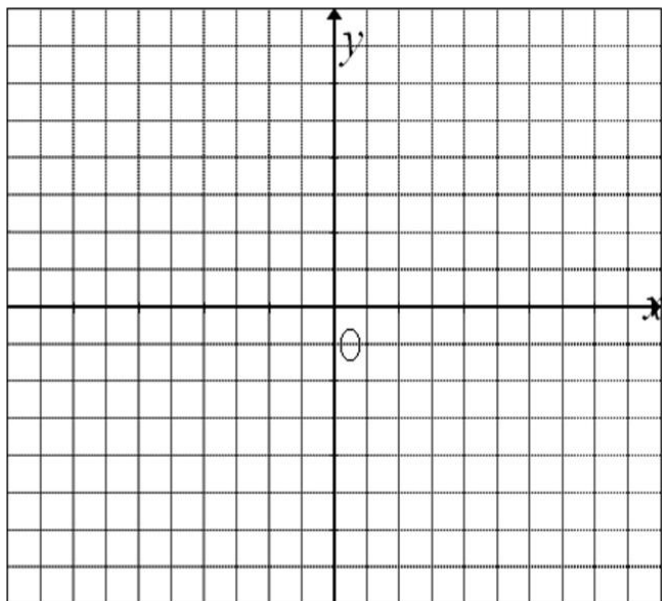
iii) $y > (x+3)^2 - 8$ and $y \leq x+1$



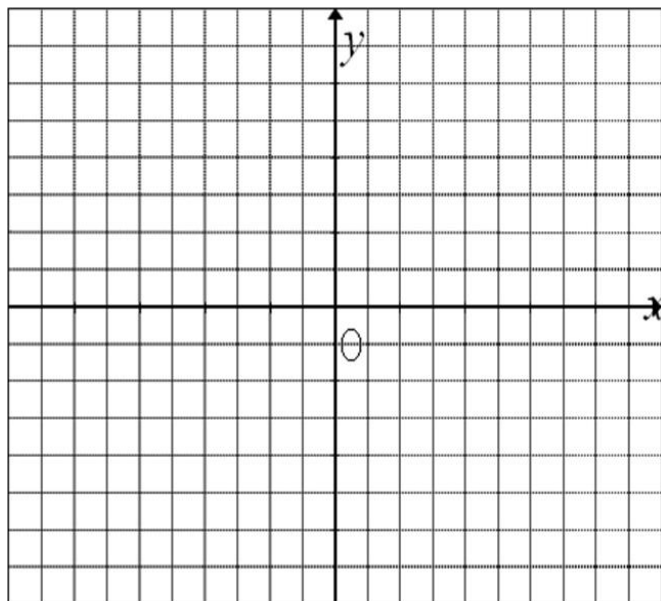
iv) $y > -(x-4)^2 + 7$ and $y \leq x+1$



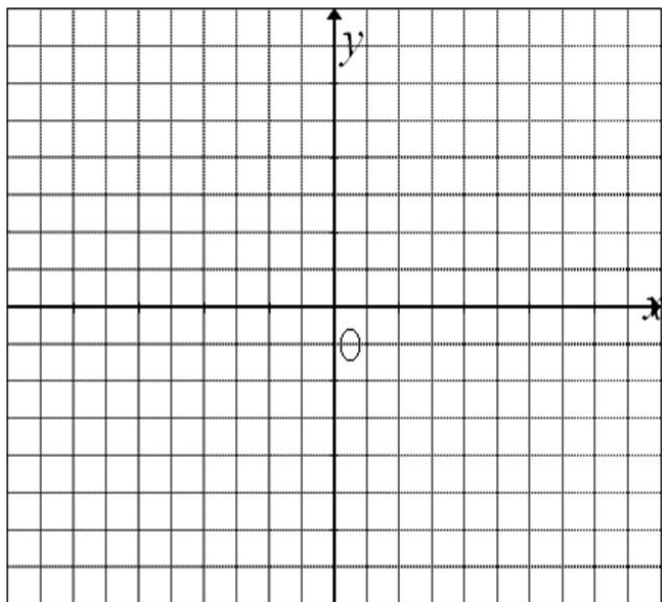
v) $y > (x-3)^2 - 4$ and $y < -(x-4)^2 + 1$



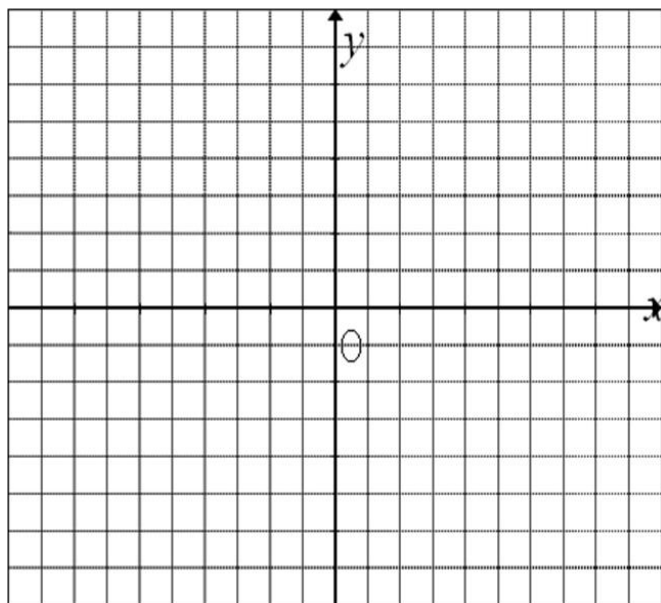
vi) $y > (x-3)^2 - 4$ and $y < -(x-4)^2 + 1$



vii) $y < -0.5(x-3)^2 + 5$ and $y \geq x^2 - 8$



viii) $y \leq (x+3)^2 - 8$ and $y < -x^2 + 6$



2. Given the quadratic inequality: $y < -2(x-3)^2 + 4.5$, how many of the following points satisfy the inequality? $A(3,5)$ $B(3,-1)$ $C(1,-10)$ $D(-4,-9)$ $E(6,-13.5)$

3. When a baseball is hit by a batter, the height of the ball $h(t)$, at time “ t ”, $t \geq 0$, is determined by the equation $h(t) = -16t^2 + 64t + 4$. For which interval of time is the height of the ball greater than or equal to 52ft?
4. The profit of a coat manufacturer makes each day is modelled by the equation: $P(x) = -x^2 + 120x - 2000$, where “ P ” is the profit and “ x ” is the price for each coat sold. For what values of “ x ” does the company make a profit? Graph the equation if necessary.
5. The height of a rocket is modelled by the equation: $y = -2x^2 + 38x + 10$, where “ x ” s time in seconds, and “ y ” is the height in feet. During what interval of time, to the nearest tenth of a second, is the projectile at least 125 ft above ground?

6. Find an inequality that best describes each graph:

