Completing the Square – Part 3

To complete the square, first make sure the equation is in the proper format, $y = ax^2 + bx + c$. Then you can complete the square and graph the quadratic relation.

1. For each quadratic relation below, complete the square to determine the equation in vertex form and then complete the summary table.

   a. $y = -3x^2 - 6x + 15$

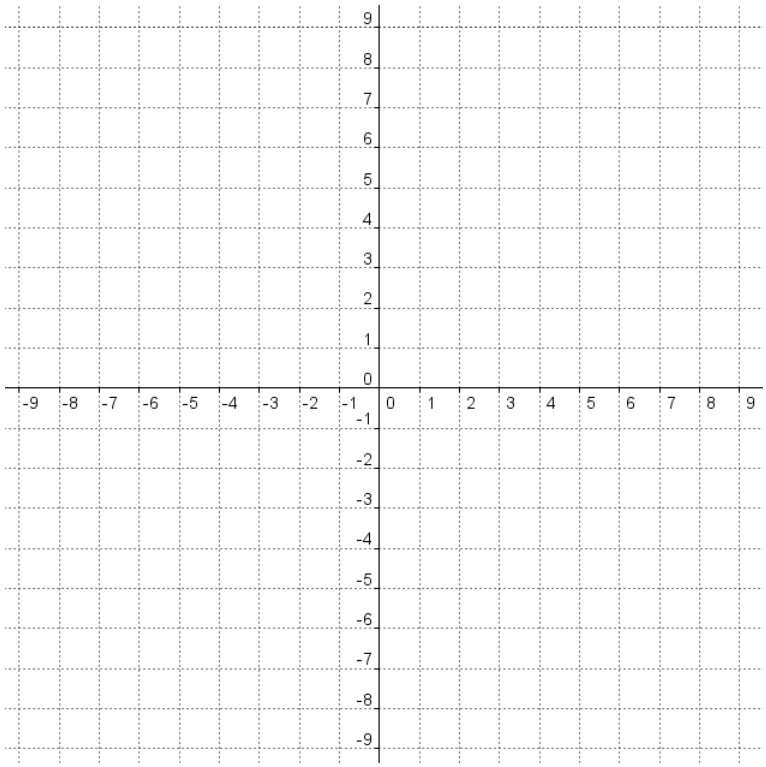
Vertex	
Direction of Opening	
Equation of Axis of Symmetry	
Maximum/Minimum Point and Value	
Over 1 Points	
Over 2 Points	

   b. $5x^2 - 21 = 10x + y$

Vertex	
Direction of Opening	
Equation of Axis of Symmetry	
Maximum/Minimum Point and Value	
Over 1 Points	
Over 2 Points	

2. For the quadratic relation below, complete the square to determine the equation in vertex form and then graph it.

$-12x - 40 = y + x^2$



Homework – Complete the attached worksheet

Completing the Square Practice

1. Complete the square for each quadratic relation below to determine the equation of the parabola in vertex form. Then complete the summary table of the properties (included below).

   a. $-y + x^2 + 3x = 40$

   b. $7x^2 - 14x - 56 = y$

   c. $y + 4x^2 + 16x = 65$

   d. $6x + y = 4x^2 - 1$

Equation	Vertex	Direction of Opening	Equation of Axis of Symmetry	Maximum or Minimum Point	Maximum or Minimum Value
a.					
b.					
c.					
d.					

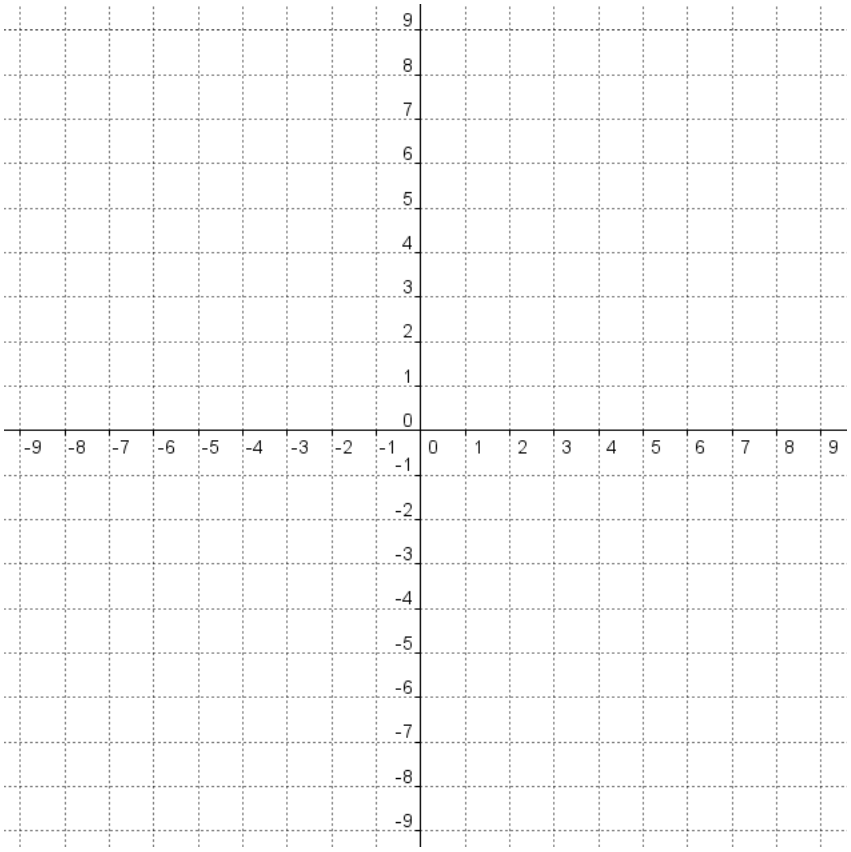
2. Complete the square for each quadratic relation below to determine the equation of each parabola in vertex form and then graph each parabola.

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

   b. $-x^2 + 10x = 18 + y$

   c. $x^2 + 22 = 2y - 8x$

   d. $-3x^2 + 12x - 7 = y$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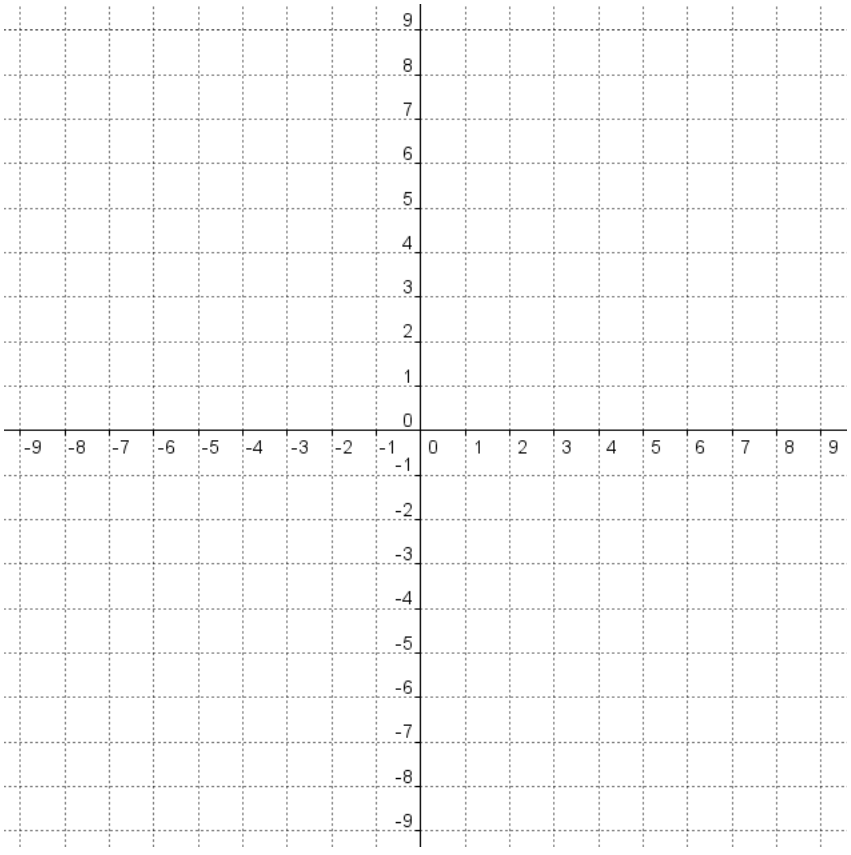
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