Name _____ Nickname _____ Class _____ No. _____

Basic Math : MA31102

## Worksheet 5 : Quadratic functions(ฟังก์ชันกำลังสอง)

The general form equation is $y = ax^2 + bx + c$, When a, b, c is real number and $a \neq 0$.
or $y = a(x-h)^2 + k$, When a, h, k is real number and $a \neq 0$.
The graph shape is a curve called a " **parabola** ".

➢ Pattern 1 $y = a(x-h)^2 + k$

The characteristics of the graph.

★$a > 0$ Upward-facing parabola.
★$a < 0$ Downward-facing parabola.

Point of Inflection (h, k)

★ Call the point (h, k) the minimum point.
★ Call the point (h, k) the maximum point.

Draw the graph of the given function and indicate the point of inflection.

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

Solution .....

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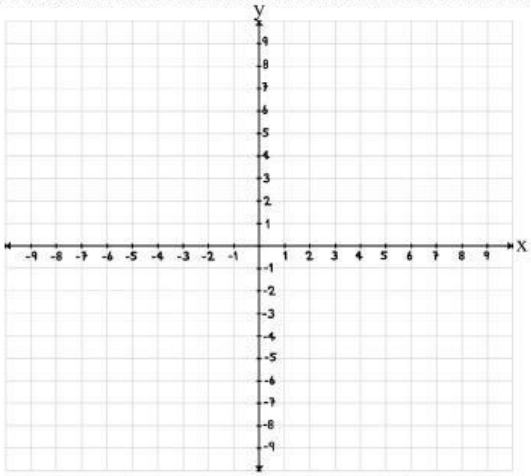

2. $y = -(x+1)^2 - 3$

Solution .....

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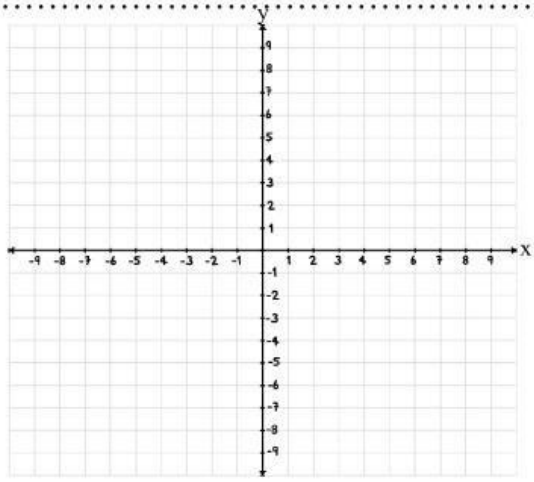

3. $y = x^2 + 2$

Solution .....

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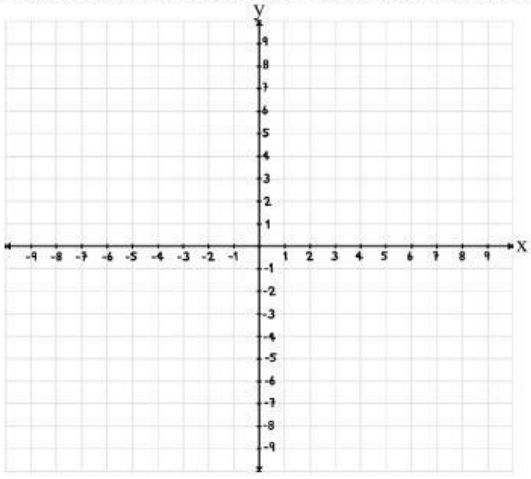

4. $y = -x^2$

Solution .....

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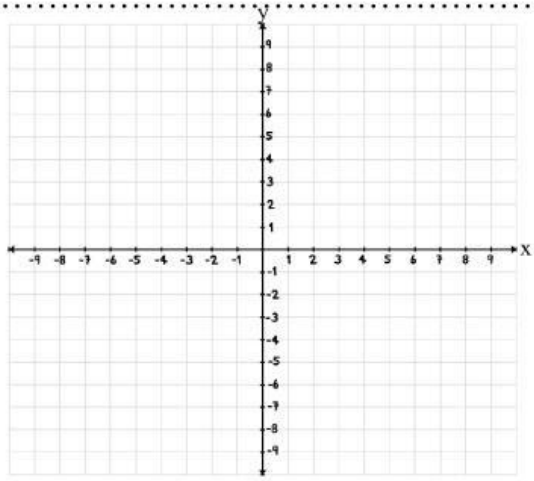

Draw the graph of the given function and consider the following quadratic function.

Find: 1. The characteristics of the graph 2. The point of inflection 3.The minimum/maximum value. 4. The points where the graph intercepts the x-axis and y-axis.

1. $y = 3(x-5)^2 + 1$

Solution .....

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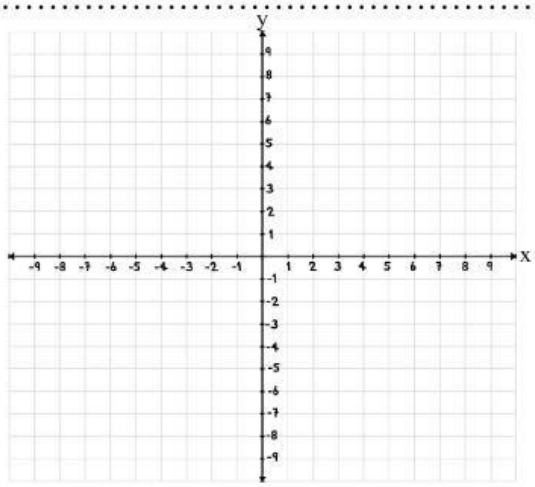


2. $y = -2(x+3)^2 - 4$

Solution .....

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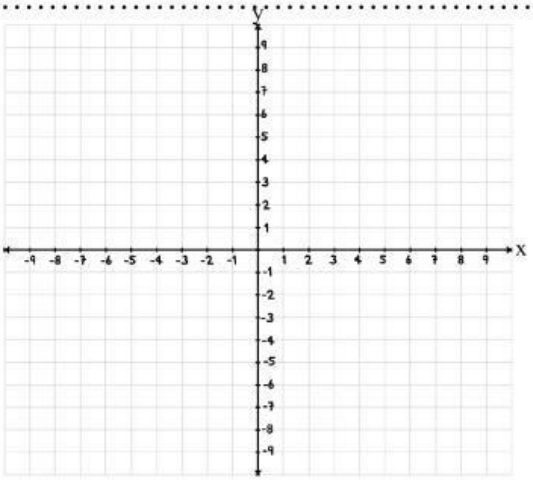


3. $y = 3x^2 + 7$

Solution .....

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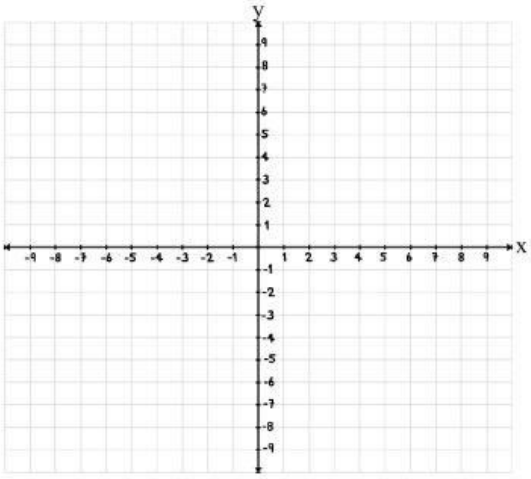


4. $y = -\frac{1}{2}x^2$

Solution .....

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