

พหุนาม

$$y = ax^2$$

$$y = ax^2 + k$$

$$y = a(x-h)^2$$

$$y = a(x-h)^2 + k$$

$$y = ax^2 + bx + c$$

$a < 0$ + \cup (h,k) = จุดต่ำสุด
 $a > 0$ - \cap (h,k) = จุดสูงสุด

(h,k) = จุดยอด

(ค่าสูงสุด/ค่าต่ำสุด) k

แทนค่าแทน $x=h$

$$h = \frac{-b}{2a}$$

$$k = \frac{4ac - b^2}{4a}$$

แล้ว

แทน k แทนที่แทนที่
h และ x

	a	b	c	h	k
① $y = 2x^2 - 1x + 5$	2	-1	5	$\frac{1}{4}$	$\frac{39}{8}$
② $y = -4x^2 - 2x + 1$	-4	-2	1	$-\frac{1}{4}$	$\frac{5}{4}$
③ $-y = x^2 - 3x - 5$ $y = -x^2 + 3x + 5$	1	-3	-5	X	
	-1	3	5	✓	$\frac{29}{4}$
④ $2y = 4x^2 + 2x - 1$ $y = 2x^2 + 1x - \frac{1}{2}$	2	1	$-\frac{1}{2}$	$-\frac{1}{4}$	
⑤ $y = 9x^2 + x - 3$	9	1	-3	$-\frac{1}{18}$	

$$h = -\frac{b}{2a}$$

$$\textcircled{1} h = \frac{-b}{2a} = \frac{-(-1)}{2(2)} = \frac{1}{4}$$

$$\textcircled{2} h = \frac{-b}{2a} = \frac{-(-2)}{2(-4)} = -\frac{1}{4}$$

$$\textcircled{3} h = \frac{-b}{2a} = \frac{-3}{2(-1)} = \frac{3}{2}$$

$$\textcircled{4} h = \frac{-b}{2a} = \frac{-1}{2(2)} = -\frac{1}{4}$$

$$\textcircled{5} h = \frac{-b}{2a} = \frac{-1}{2(9)} = -\frac{1}{18}$$

$$k = \frac{4ac - b^2}{4a} \quad \boxed{\text{วิธี}} \text{ นามอน h Qu x}$$

$$\textcircled{1} \quad k = \frac{4ac - b^2}{4a} = \frac{4(2)(5) - (-1)^2}{4(2)} = \frac{40 - 1}{8} = \frac{39}{8}$$

$$\textcircled{2} \quad k = \frac{4ac - b^2}{4a} = \frac{4(-4)(1) - (-2)^2}{4(-4)} = \frac{-16 - 4}{-16}$$
$$= \frac{-20}{-16} = \frac{5}{4}$$

$$\textcircled{3} \quad k = \frac{4ac - b^2}{4a} = \frac{4(-1)(5) - (3)^2}{4(-1)} = \frac{-20 - 9}{-4}$$
$$= \frac{-29}{-4} = \frac{29}{4}$$

ทว้น I ① ทำจุดหน้ ๑ (ที่คดใจ)

② เสร้คตทว ที่เนลลย

ทว้น II