

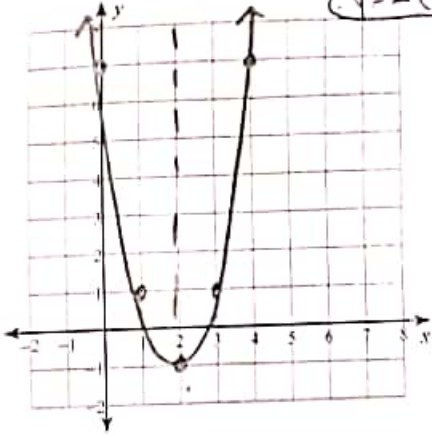
4.2- Graphing quadratics by completing the square

Date _____

Period _____

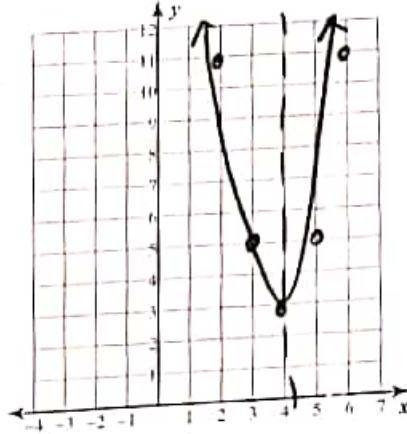
Complete the square to re-write each function in vertex form. Then graph.

1) $y = 2x^2 - 8x + 7$ $2(x^2 - 4x + \boxed{4}) + 7 - \boxed{8}$
 $y = 2(x-2)^2 - 1$



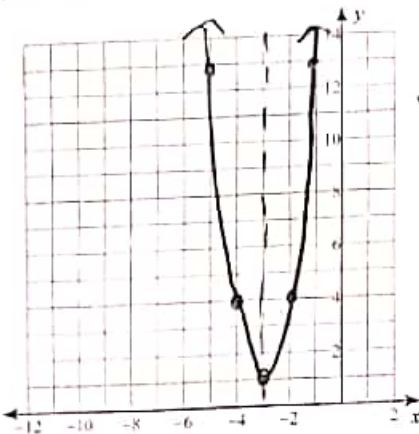
Vertex: (2, -1)

2) $y = 2x^2 - 16x + 35$ $2(x^2 - 8x + \boxed{16}) + 35 - \boxed{32}$
 $2(x-4)^2 + 3$

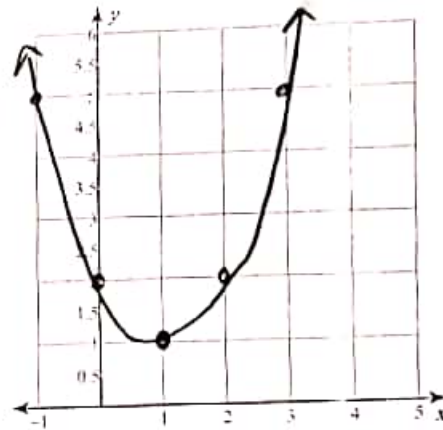


Vertex: (4, 3)

3) $y = 3x^2 + 18x + 28$ $3(x^2 + 6x + \boxed{9}) + 28 - \boxed{27}$ 4) $y = x^2 - 2x + 2$ $x^2 - 2x + \boxed{1} + 2 - \boxed{1}$

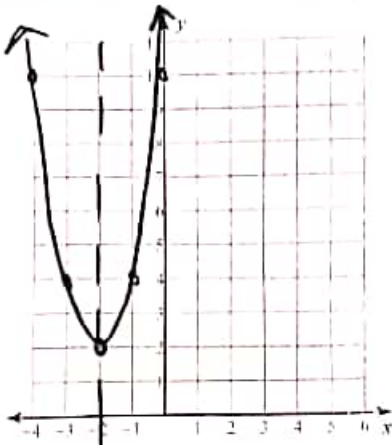


Vertex: (-3, 1)

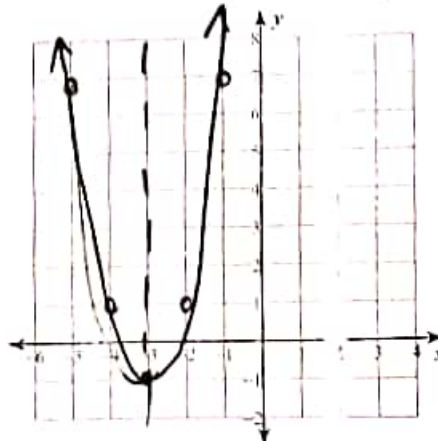


Vertex: (1, 1)

5) $y = 2x^2 + 8x + 10$ $2(x^2 + 4x + \boxed{4}) + 10 - \boxed{8}$ 6) $y = 2x^2 + 12x + 17$ $2(x^2 + 6x + \boxed{9}) + 17 - \boxed{18}$



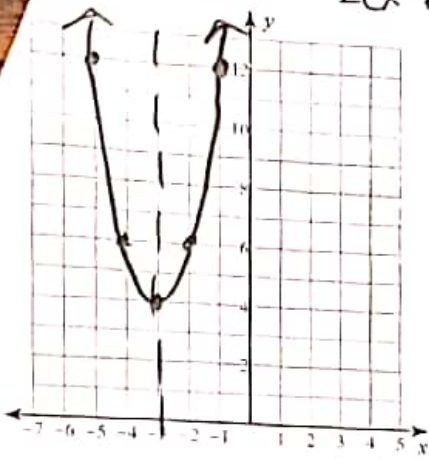
Vertex: (-2, 2)



Vertex: (-3, -1)

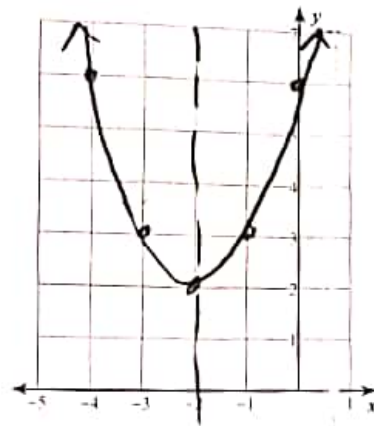
$$= 2x^2 + 12x + 22$$

$$2(x^2 + 6x + 9) + 22 - 18 = y = x^2 + 4x + 6$$



$$2(x+3)^2 + 4$$

$(-3, 4)$



$$x^2 + 4x + 4 + 6 - 4$$

$$(x+2)^2 + 2$$

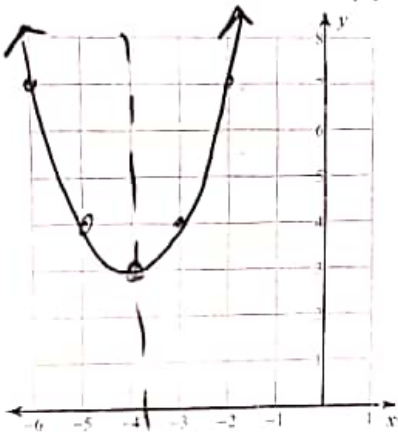
$-2, 2$

9) $y = x^2 + 8x + 19$

$$x^2 + 8x + 16 + 19 - 16$$

$$(x+4)^2 + 3$$

$(-4, 3)$



10) $y = x^2 + 6x + 10$

$$x^2 + 6x + 9 + 10 - 9$$

$$(x+3)^2 + 1$$

$-3, 1$

