

## Vertex Form of Parabolas

Use the information provided to write the vertex form equation of each parabola.

①  $y = x^2 + 16x + 71$

②  $y = x^2 - 2x - 5$

3)  $y = -x^2 - 14x - 59$

4)  $y = 2x^2 + 36x + 170$

⑤  $y = x^2 - 12x + 46$

⑥  $y = x^2 + 4x$

⑦  $y = x^2 - 6x + 5$

⑧  $y = (x + 5)(x + 4)$

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

10)  $6x^2 + 12x + y + 13 = 0$

11)  $162x + 731 = -y - 9x^2$

~~12)  $x^2 - 12x + y + 40 = 0$~~

⑬  $y = x^2 + 10x + 33$

14)  $y + 6 = (x + 3)^2$

## Vertex Form Practice

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Date \_\_\_\_\_ Period \_\_\_\_\_

Use the information provided to write the vertex form equation of each parabola.

①  $y = x^2 - 4x + 5$

②  $y = x^2 - 16x + 70$

③  $y = x^2 - 4x + 2$

4)  $y = -3x^2 + 48x - 187$

5)  $y = -2x^2 - 12x - 12$

6)  $y = 3x^2 + 18x + 18$

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

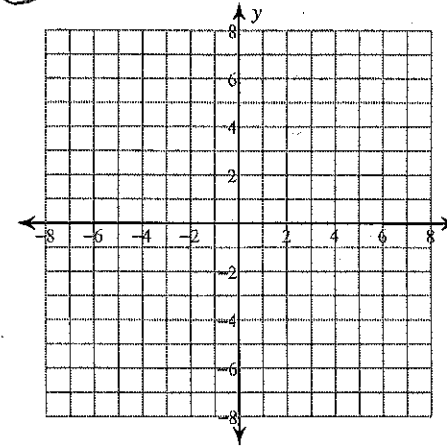
8)  $y = 4x^2 - 56x + 200$

9)  $y = -8x^2 - 80x - 199$

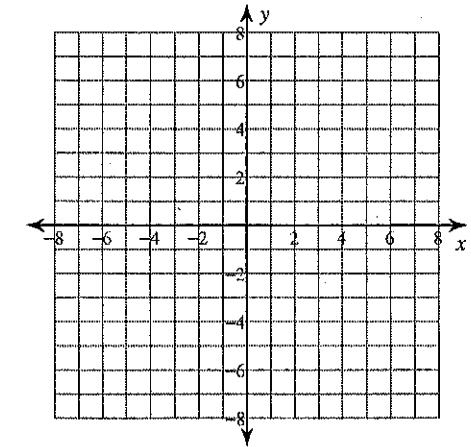
10)  $y = -2x^2 + 20x - 52$

Identify the vertex and axis of symmetry of each. Then sketch the graph.

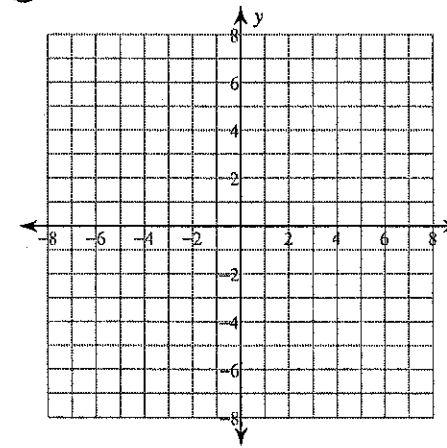
15)  $f(x) = -3(x-2)^2 - 4$



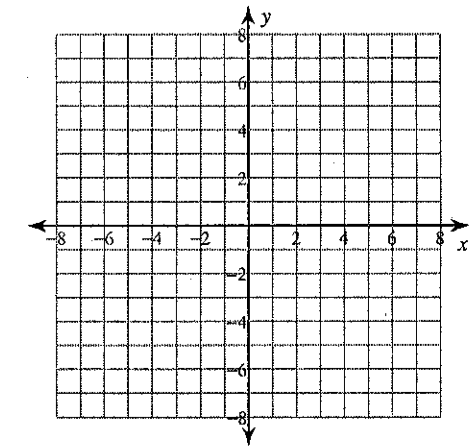
16)  $f(x) = -\frac{1}{4}(x-1)^2 + 4$



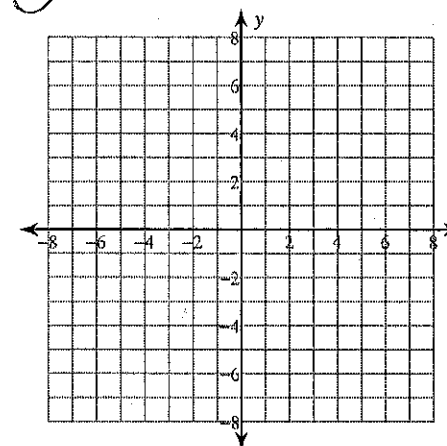
17)  $f(x) = \frac{1}{4}(x+4)^2 + 3$



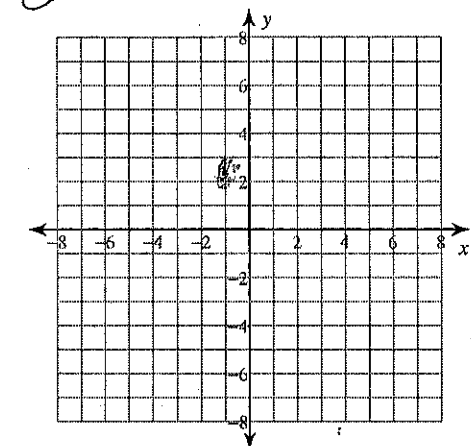
18)  $f(x) = \frac{1}{4}(x+5)^2 + 2$



19)  $f(x) = -2(x+5)^2 - 3$

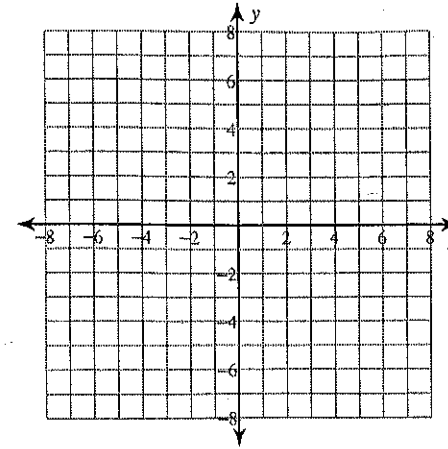


20)  $f(x) = (x+2)^2 - 1$

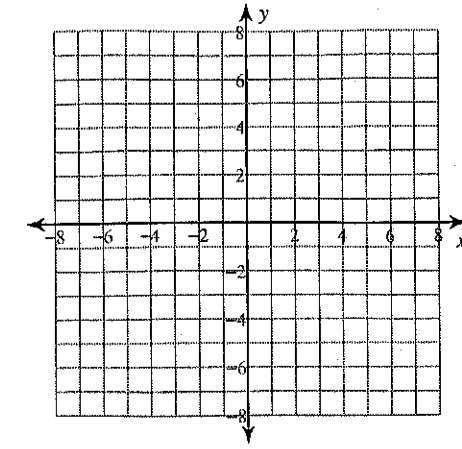


Identify the vertex and axis of symmetry of each by converting to vertex form. Then sketch the graph.

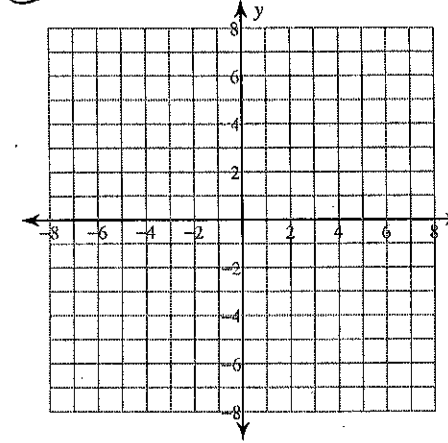
11)  $y = x^2 - 12x + 36$



12)  $y = -x^2 - 6x - 10$



13)  $y = x^2 - 2x - 1$



14)  $y = -2x^2 + 8x - 11$

