The equation of an ellipse is: $\frac{x^2}{a^2} + \frac{y^2}{b^2} = c$ where: a, b - major and minor axes.

The equation of the hyperbola is: $\frac{x^2}{a^2} - \frac{y^2}{b^2} = c$ where: a, b - major and minor axes.

The equation of the parabola is: $y = ax^2 + bx + c$

So, if we have any equation: $\pm ay^n \pm bx^n \pm \cdots = c$, that to identify it as parabola: one variable should be as ay (the first degree only), other as ax^2 (the second degree and also can contain first degree).

If two variables is as: ax^2 (the second degree), that to identify it as ellipse or hyperbola it is necessary to consider signs of variables factors: if it's equal (+ and +or- and -) - it is ellipse, if not – hyperbola.