More Quadratic functions

aka (Parabolas)

Vertex Form: $y = a(x-p)^2 + q$

Vertex: (p, q)

Recall: A q.f. has an x^2 (no higher or weird powers of x)

$y = (x-3)^2 + 2$ ✓

$y = x^2 + 3x + 2$ ✓

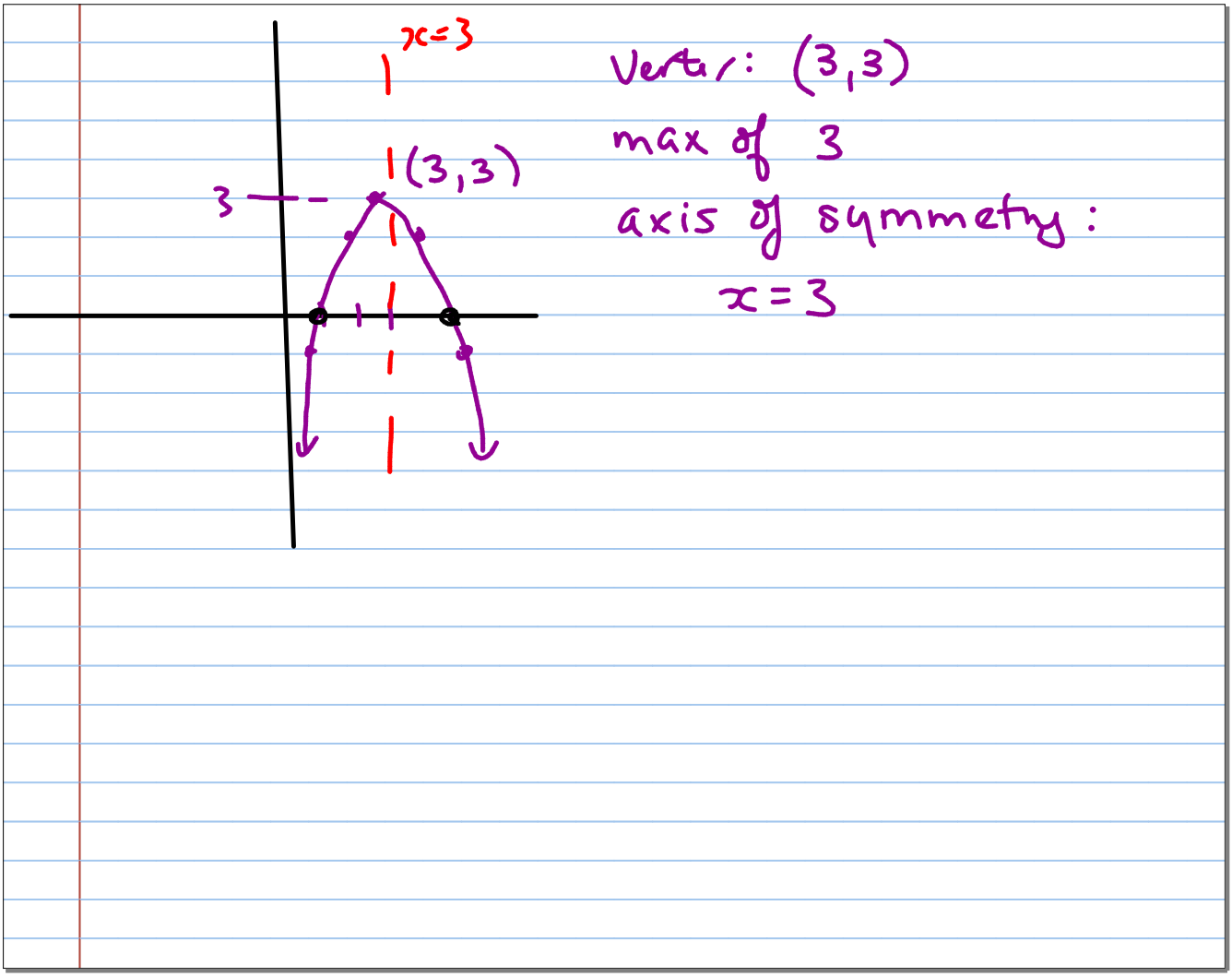
$y = x(x+2)$

$y = x^2 + 2x$ ✓

$y = x^2 + \frac{3}{x}$ X (NOT a parabola)

$y = x(x-1)(x+2)$ X

$= x^3 + \ldots$


x=3
(3,3)
3
Vertex: (3,3)
max of 3
axis of symmetry:
x=3

Standard Form

$y = x^2 + 2x + 3$ $\quad A = 1,\ B = 2,\ C = 3$

$y = Ax^2 + Bx + C$

$y_1 = x^2 + 2x + 3$

$y = 3x^2 + \frac{2}{7}x + 19$

Using Your Graphing Calc:

To find vertex:

2nd function Trace

Max or min

- cursor to LEFT of vertex (enter)
- cursor to RIGHT of vertex (enter)
- Guess? (ignore! enter)

X-INTERCEPTS:

- 2nd function Trace (calc)
- "ZEROES"
- Curser on the left of the intersection ↓ hit enter, same on the right
- Guess? Enter

TODAY Work on 3.2

When you are done, go back & finish 3.1

Tomorrow we move on to 3.3