Characteristics of Polynomial Graphs

Putting It All Together

Left graph labels: (−1.309, 4.927), +∞, −5, −1.309, 3.309, 0, ∞, −5, (3.309, −4.927), −∞

Left side:

Domain $(-\infty, \infty)$

Range $(-\infty, \infty)$

Zero(s) $-3, 1, 5$ — AKA x-int. but you can just write x-coord. (0, #)
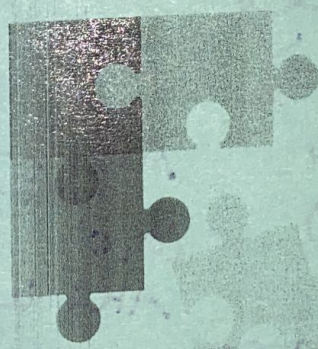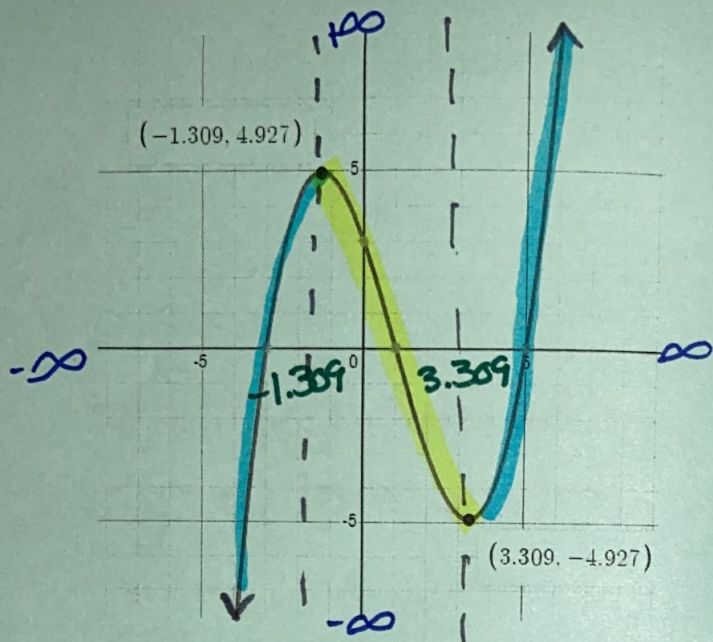
Y-intercept $(0, 3)$

# of Extrema 2 — AKA turns

Relative Maximum 4.927 "peaks" ⎫ y-coord.

Relative Minimum -4.927 "valleys" ⎭

Absolute Maximum none

Absolute Minimum none

Int. of Increasing $(-\infty, -1.309) \cup (3.309, \infty)$ x-values!

Int. of Decreasing $(-1.309, 3.309)$

As x → ∞, f(x) → $+\infty$ (right)

As x → -∞, f(x) → $-\infty$ (left)

Right graph labels: (−1, 6.4), 5, −5, −1, 0, 2, 5, +∞, −∞, −5

Right side:
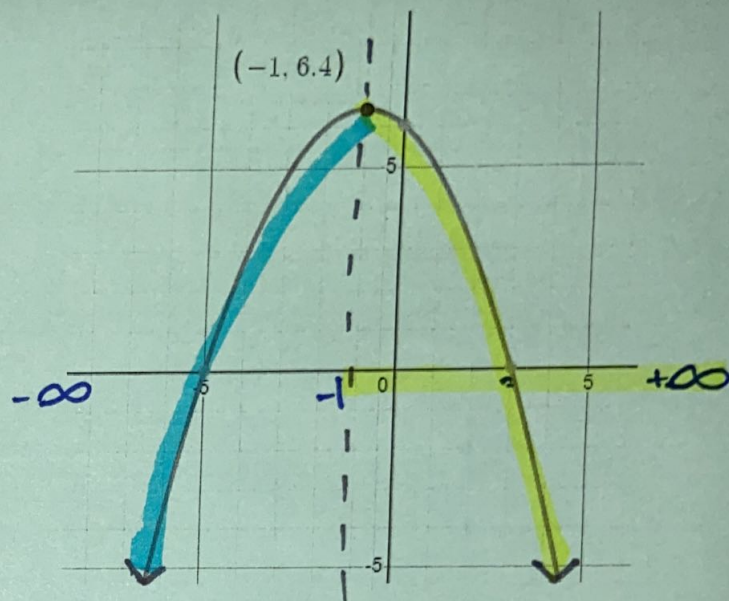
Domain $(-\infty, \infty)$

Range $(-\infty, 6.4]$

Zero(s) $-5 \& 3$

Y-intercept $(0, 6)$

# of Extrema 1 — Least possible degree 2

Relative Maximum 6.4

Relative Minimum none

Absolute Maximum 6.4

Absolute Minimum none

Int. of Increasing $(-\infty, -1)$

Int. of Decreasing $(-1, \infty)$

As x → ∞, f(x) → $-\infty$

As x → -∞, f(x) → $-\infty$