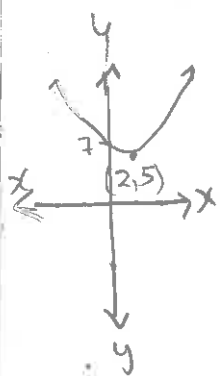


Example 5: Using the Graphing Calculator to determine Characteristics of Quadratic Functions

Analyze each quadratic function by providing the requested characteristics.



a) $y = 0.5x^2 - 2x + 7$

Direction of opening: Up

End behaviour: Q II to Q I

x-intercept(s): none

Minimum value: 5 (vertex 2, 5)

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

Sign of leading co-efficient: positive

y-intercept: 7 (0, 7)

Vertex: (2, 5)

Maximum value: none

Range: $[5, \infty)$

b) $y = (7 - 2x)(x + 10)$

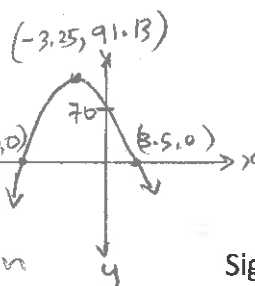
Direction of opening: Down

End behaviour: Q III to Q IV

x-intercept(s): -10 and 3.5

Minimum value: none

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



Sign of leading co-efficient: Negative

y-intercept: 70

Vertex: $(-3.25, 91.13)$

Maximum value: 91.13

Range: $(-\infty, 91.13)$

c) $y = -34.2x^2 + 8.25x - 44$

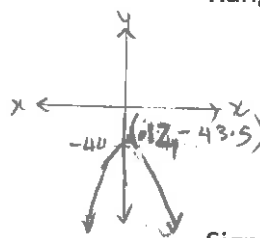
Direction of opening: Down

End behaviour: Q III to Q IV

x-intercept(s): none

Minimum value: none

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



Sign of leading co-efficient: negative

y-intercept: -44

Vertex: $(0.12, -43.5)$

Maximum value: -43.5

Range: $(-\infty, -43.5)$