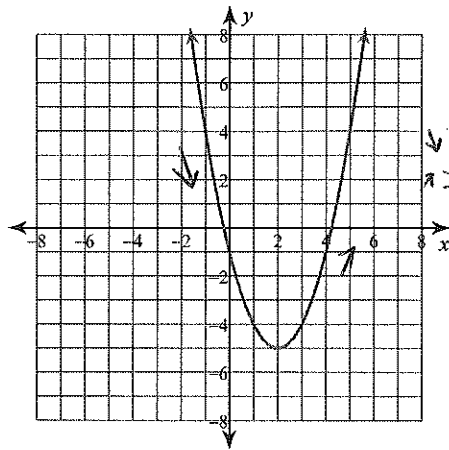


Target 2B

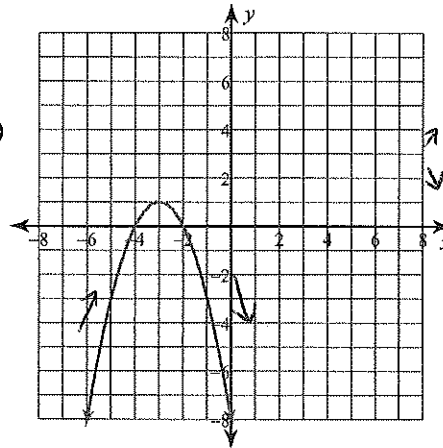
- 1) Use the Nspire to sketch the graph of each function.
- 2) State the number of real zeros. (Zeros occur where the graph crosses or touches the x-axis.)
- 3) Approximate each zero to the nearest tenth. (Menu, Analyze Graph, Zero)
- 4) Approximate the relative minima and relative maxima to the nearest tenth. (Menu, Analyze Graph, Min/Max)
- 5) Using interval notation, state the x-intervals where the function is decreasing and/or increasing.

1) $f(x) = x^2 - 4x - 1$



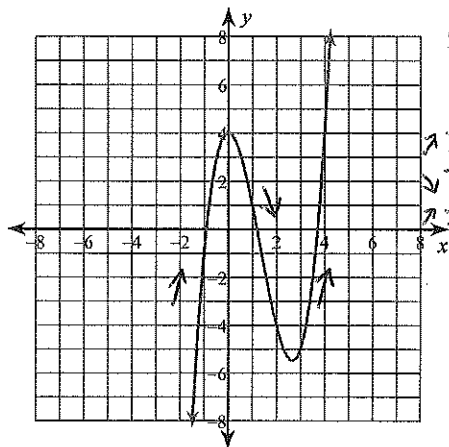
Real Zeros: 2
 Real Zeros: -0.2, 4.2
 Minima: (2, -5)
 Maxima: None
 ↓ Decreasing: $(-\infty, 2)$
 ↑ Increasing: $(2, \infty)$

2) $f(x) = -x^2 - 6x - 8$



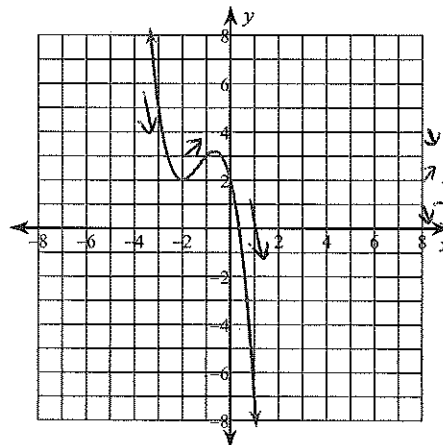
Real Zeros: 2
 Real Zeros: -4, -2
 Minima: None
 Maxima: (-3, 1)
 ↑ Increasing: $(-\infty, -3)$
 ↓ Decreasing: $(-3, \infty)$

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



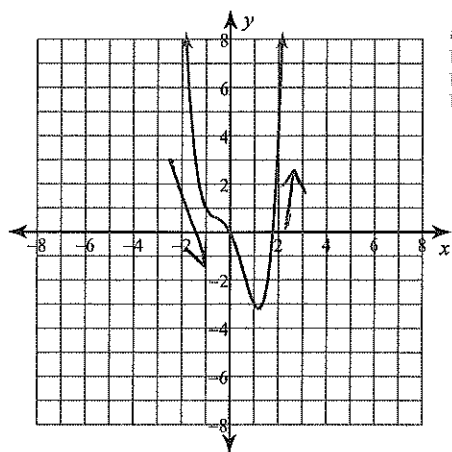
Real Zeros: 3
 Real Zeros: -0.9, 1.2, 3.7
 Minima: (2.7, -5.5)
 Maxima: (0, 4)
 ↑ Increasing: $(-\infty, 0)$
 ↓ Decreasing: $(0, 2.7)$
 ↑ Increasing: $(2.7, \infty)$

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



Real Zeros: 1
 Real Zeros: 0.4
 Minima: (-2, 2)
 Maxima: (-0.7, 3.2)
 ↓ Decreasing: $(-\infty, -2)$
 ↑ Increasing: $(-2, -0.7)$
 ↓ Decreasing: $(-0.7, \infty)$

$$5) f(x) = x^4 - 2x^2 - 2x$$

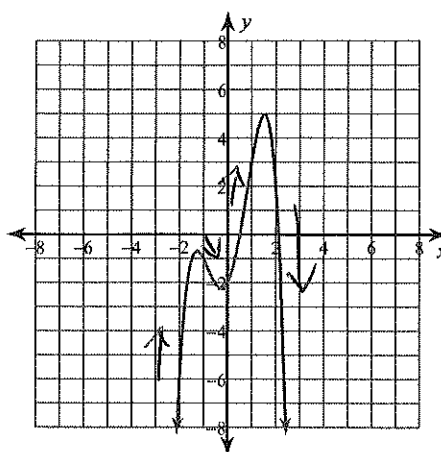


Real Zeros: 2
 Real Zeros: 0, 1.8
 Minima: (1.2, -3.2)
 Maxima: None

↓ Decreasing: $(-\infty, 1.2)$

↑ Increasing: $(1.2, \infty)$

$$6) f(x) = -x^4 + 4x^2 + 2x - 2$$



Real Zeros: 2
 Real Zeros: 0.5, 2.1
 Minima: (-0.3, -2.3)
 Maxima: (1.5, 4.9)

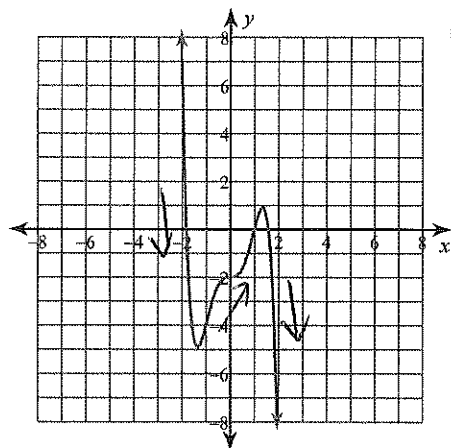
↑ Increasing: $(-\infty, -1.3)$

↓ Decreasing: $(-1.3, -0.3)$

↑ Increasing: $(-0.3, 1.5)$

↓ Decreasing: $(1.5, \infty)$

$$7) f(x) = -x^5 + 3x^3 - 2$$



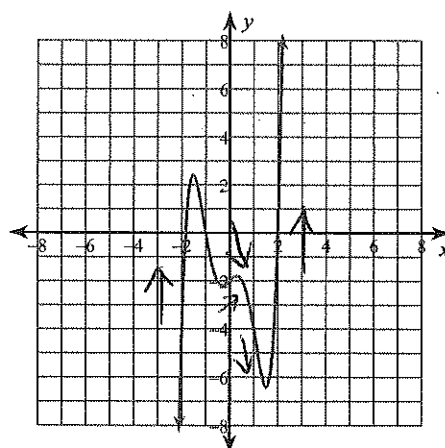
Real Zeros: 3
 Real Zeros: -1.8, 1, 1.6
 Minima: (-1.3, -4.9)
 Maxima: (1.3, 0.9)

↓ Decreasing: $(-\infty, -1.3)$

↑ Increasing: $(-1.3, 1.3)$

↓ Decreasing: $(1.3, \infty)$

$$8) f(x) = x^5 - 4x^3 + x - 2$$



Real Zeros: 3
 Real Zeros: -1.8, -1, 2
 Minima: (-0.3, -2.2)
 (1.5, -6.4)
 Maxima: (-1.5, 2.4)
 (0.3, -1.8)

↑ Increasing: $(-\infty, -1.5)$

↓ Decreasing: $(-1.5, -0.3)$

↑ Increasing: $(-0.3, 0.3)$

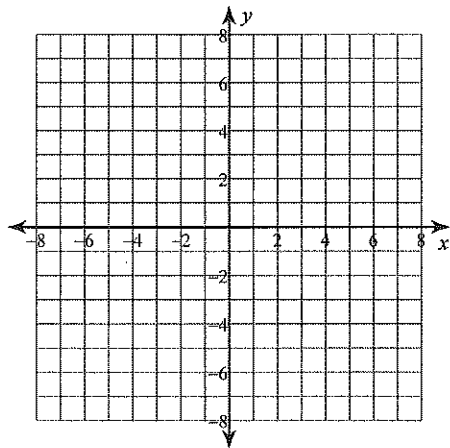
↓ Decreasing: $(0.3, 1.5)$

↑ Increasing: $(1.5, \infty)$

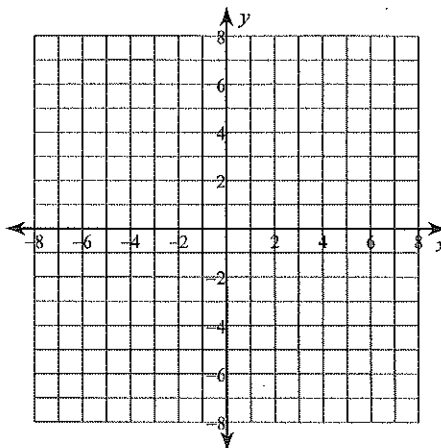
Target 2B

- 1) Use the Nspire to sketch the graph of each function.
- 2) State the number of real zeros. (Zeros occur where the graph crosses or touches the x-axis.)
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- 4) Approximate the relative minima and relative maxima to the nearest tenth. (Menu, Analyze Graph, Min/Max)
- 5) Using interval notation, state the x-intervals where the function is decreasing and/or increasing.

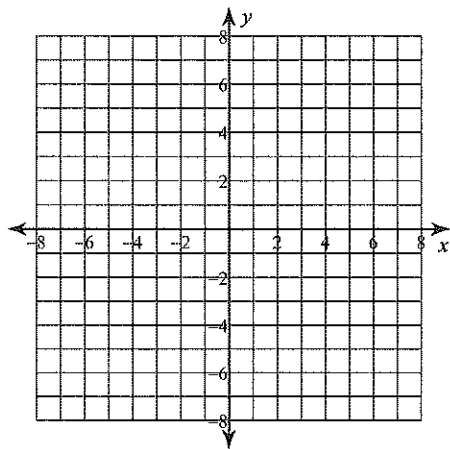
1) $f(x) = x^2 - 4x - 1$



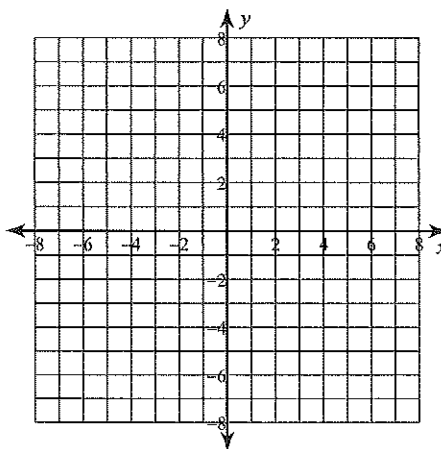
2) $f(x) = -x^2 - 6x - 8$



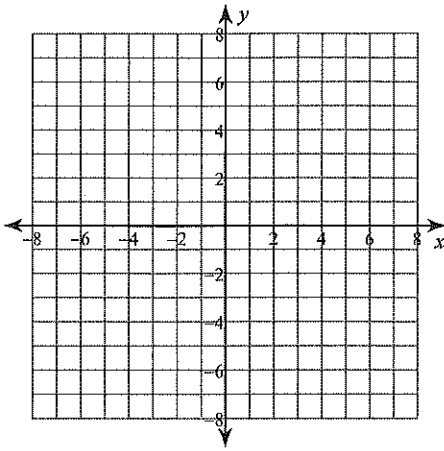
3) $f(x) = x^3 - 4x^2 + 4$



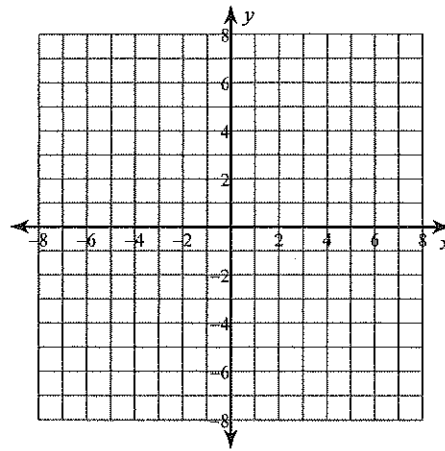
4) $f(x) = -x^3 - 4x^2 - 4x + 2$



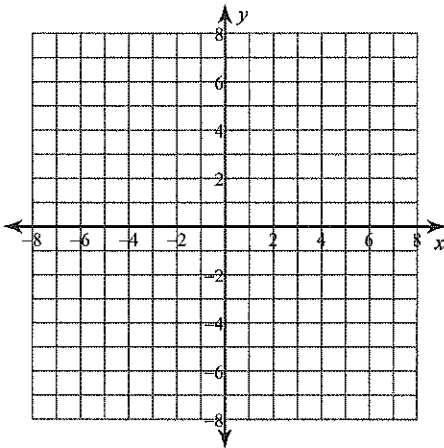
5) $f(x) = x^4 - 2x^2 - 2x$



6) $f(x) = -x^4 + 4x^2 + 2x - 2$



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



8) $f(x) = x^5 - 4x^3 + x - 2$

