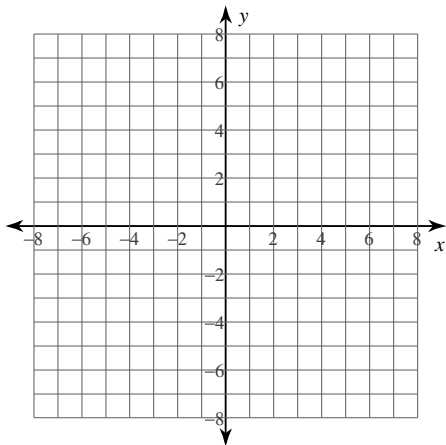


Graphing Polynomials

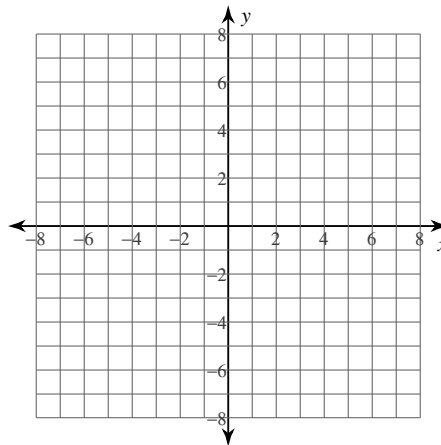
© 2013 Kuta Software LLC. All rights reserved.

Sketch the graph of each function.

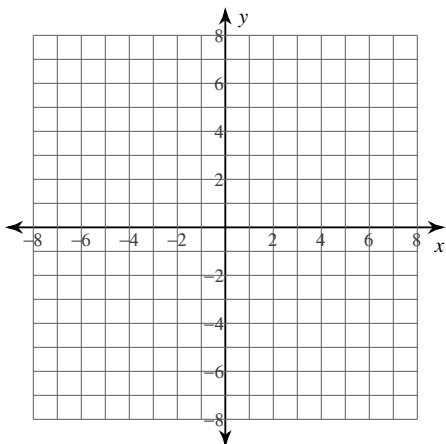
1) $f(x) = x^5 - 3x^3 + 3x + 1$



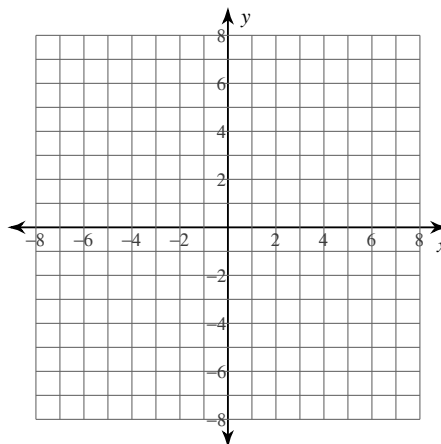
2) $f(x) = x^3 - x^2 + 2$



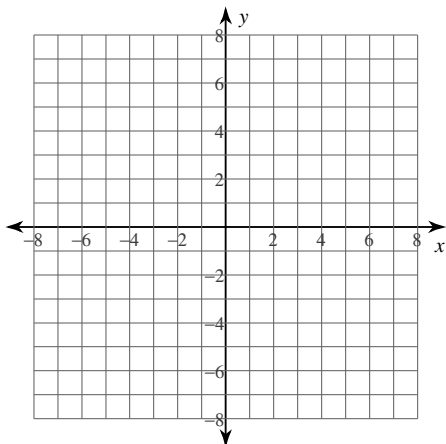
3) $f(x) = -x^4 + 4x^2 + x - 5$



4) $f(x) = -x^5 + 3x^3 + 1$

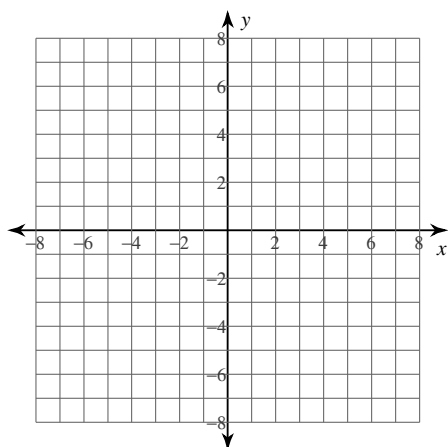


5) $f(x) = x^4 - 4x^2 - x - 1$

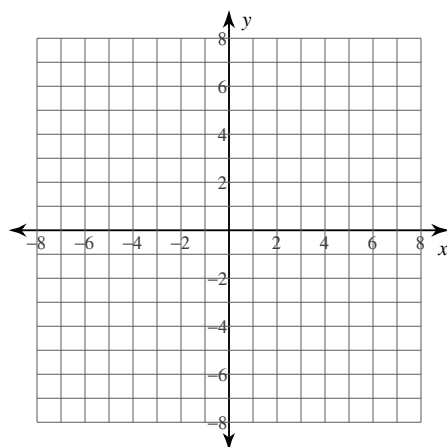


State the maximum number of turns the graph of each function could make. Then sketch the graph.

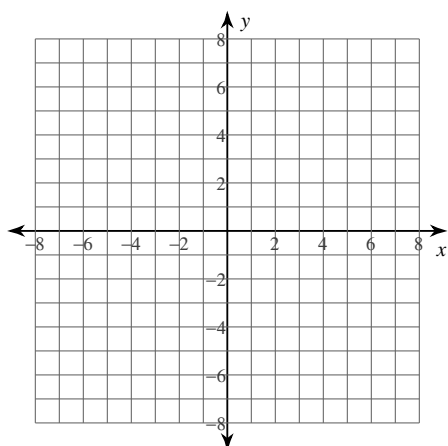
6) $f(x) = x^3 + 10x^2 + 32x + 33$



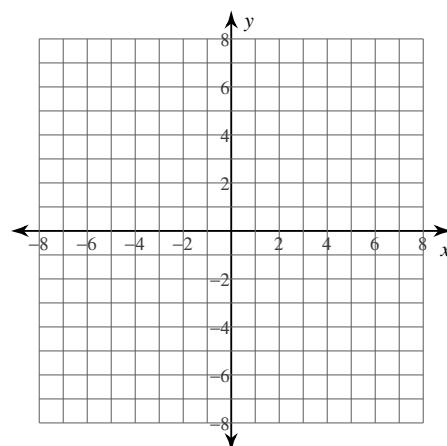
7) $f(x) = x^4 - 4x^2 + x + 2$



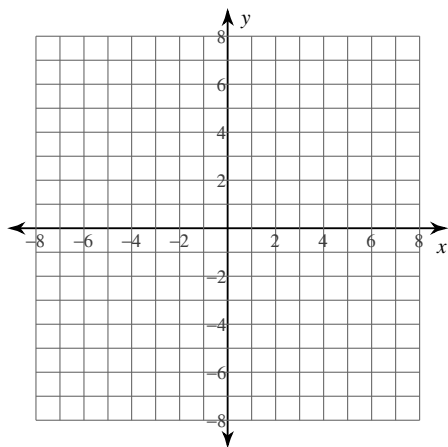
8) $f(x) = -x^3 + 8x^2 - 20x + 15$



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

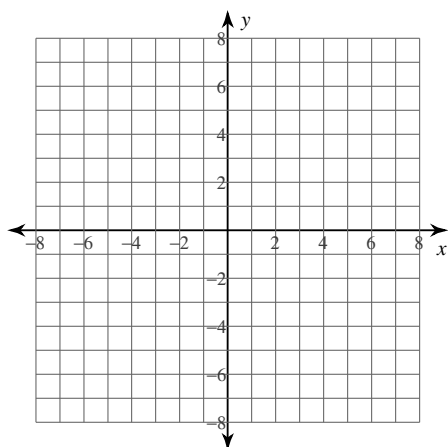


10) $f(x) = x^5 - 3x^3 + 3x + 1$

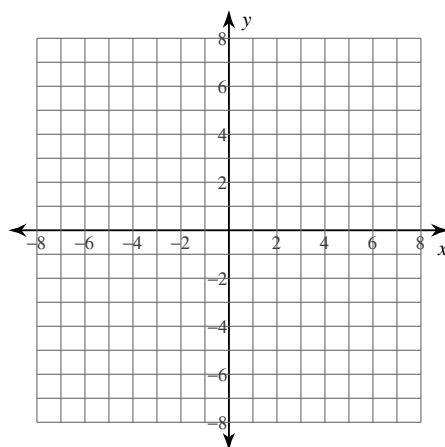


Sketch the graph of each function. State the number of real zeros.

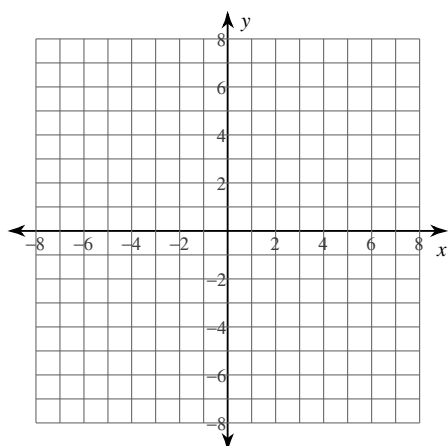
11) $f(x) = -x^5 + 4x^3 - 3x$



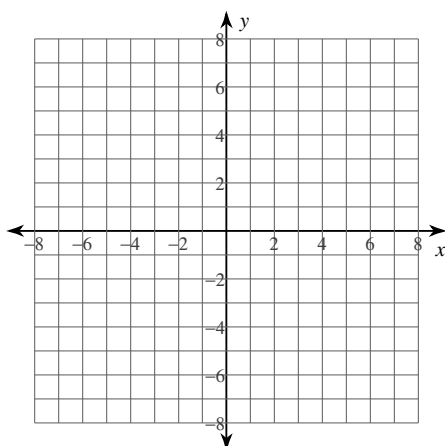
12) $f(x) = -x^3 + 2x^2 + 1$



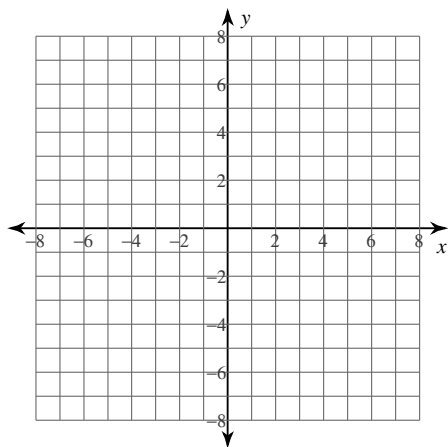
13) $f(x) = -x^5 + 4x^3 - 2x$



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

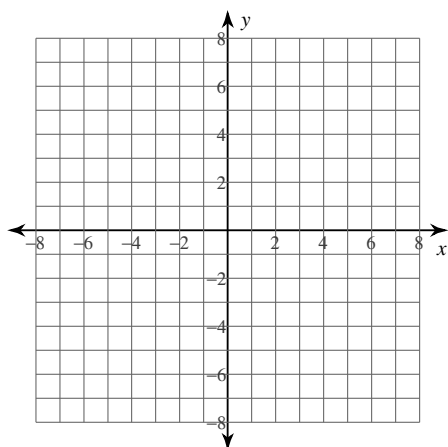


15) $f(x) = x^4 - 4x^2 + x + 1$

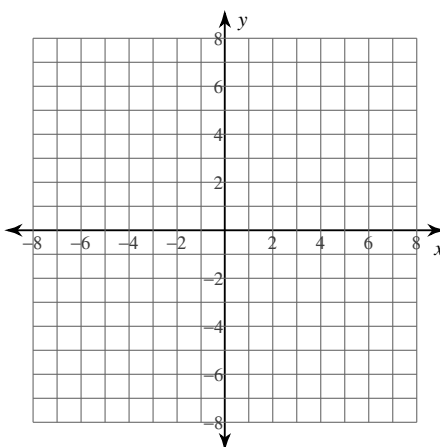


Sketch the graph of each function. Approximate each real zero to the nearest tenth.

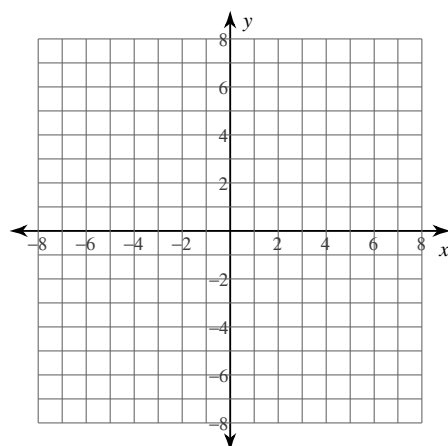
16) $f(x) = x^5 - 3x^3 + x - 4$



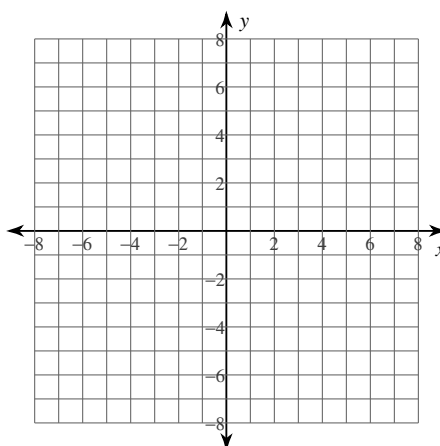
17) $f(x) = -x^4 + x^3 + 3x^2 - 4$



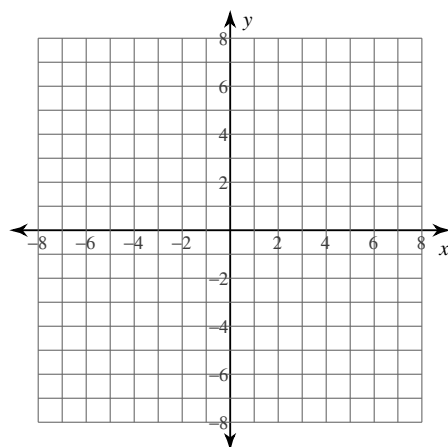
18) $f(x) = x^3 - x^2 + 4$



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

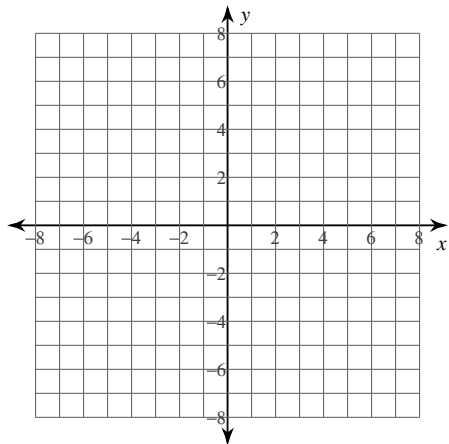


20) $f(x) = x^4 - x^2 + 1$

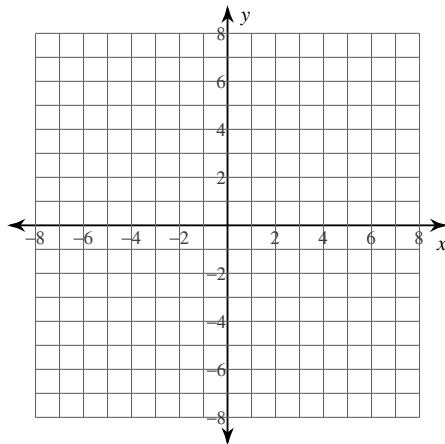


Sketch the graph of each function. Approximate the relative minima and relative maxima to the nearest tenth.

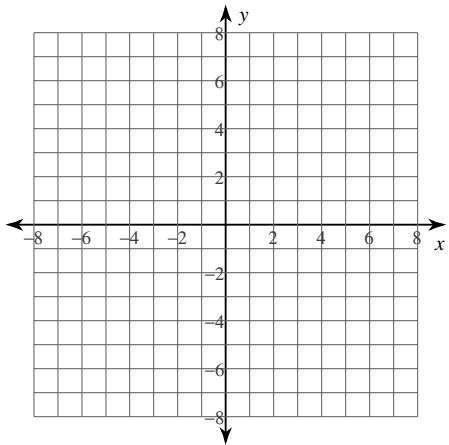
21) $f(x) = -x^4 + x^2 - 3$



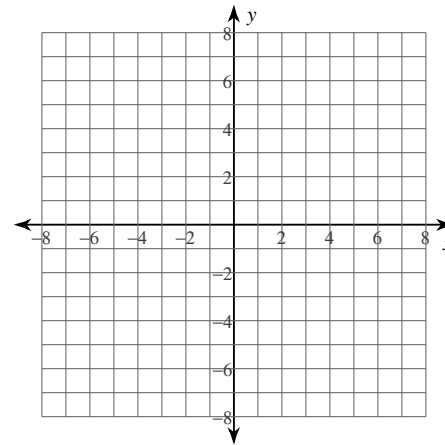
22) $f(x) = -x^4 - 4x^3 - 5x^2 - 3x + 3$



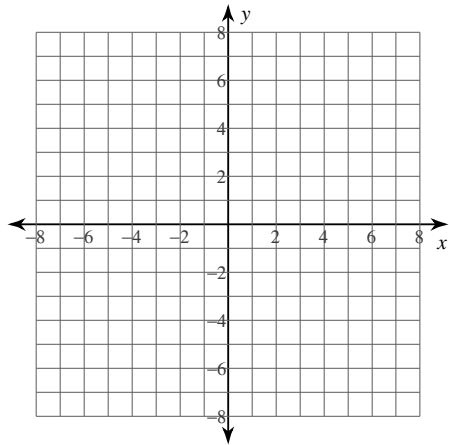
23) $f(x) = x^5 - 4x^3 + 4x - 1$



24) $f(x) = -x^3 + 4x^2 - 7$

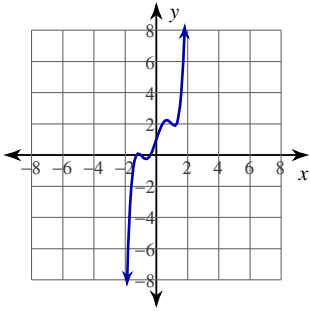


25) $f(x) = x^3 - 4x^2 + 4$

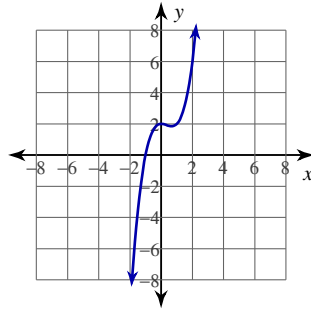


Answers to Graphing Polynomials (ID: 1)

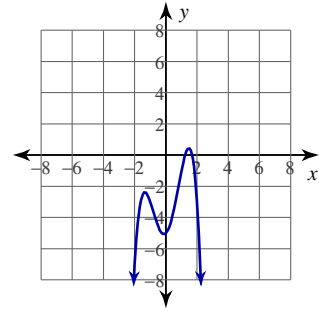
1)



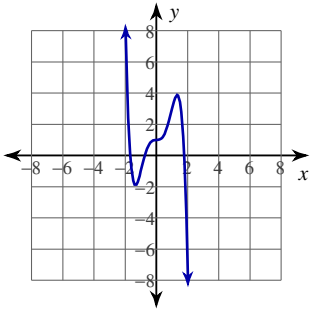
2)



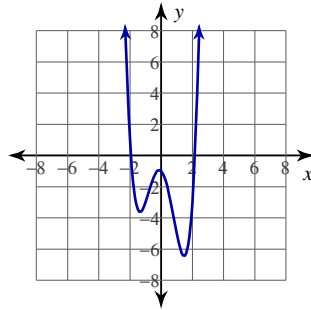
3)



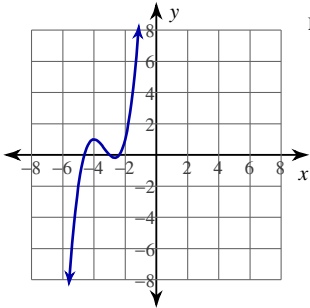
4)



5)

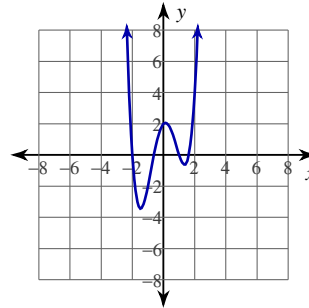


6)



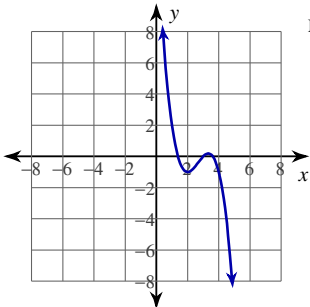
Max # Turns: 2

7)



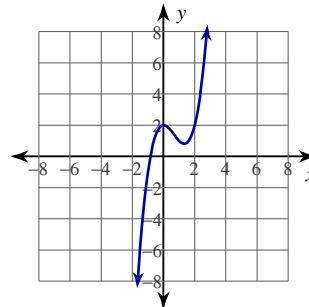
Max # Turns: 3

8)



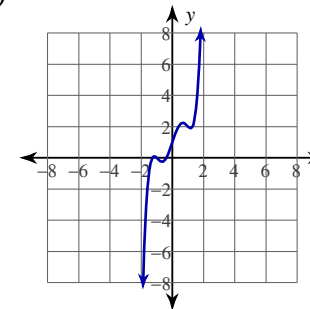
Max # Turns: 2

9)



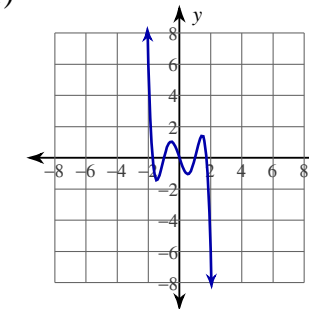
Max # Turns: 2

10)



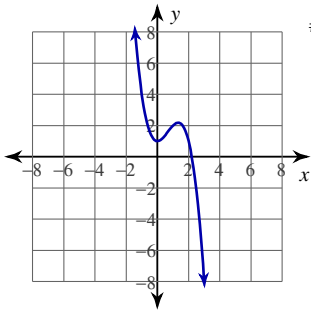
Max # Turns: 4

11)



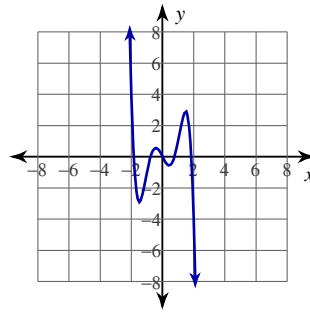
Real Zeros: 5

12)



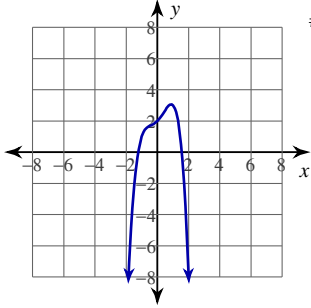
Real Zeros: 1

13)



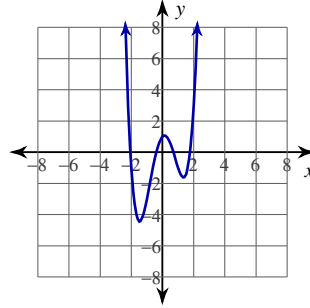
Real Zeros: 5

14)



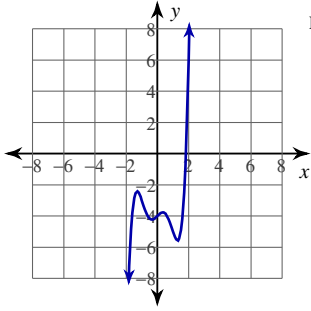
Real Zeros: 2

15)



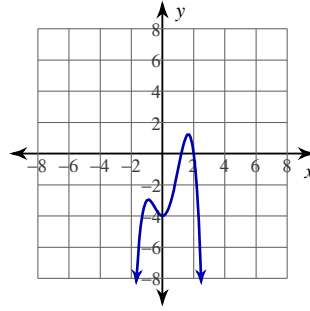
Real Zeros: 4

16)



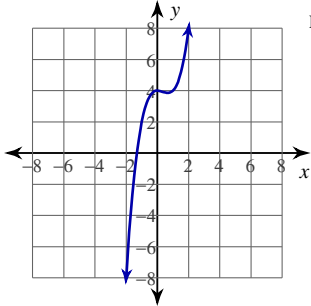
Real Zeros: 1.8

17)



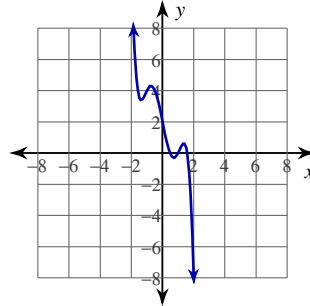
Real Zeros: 1.2, 2

18)



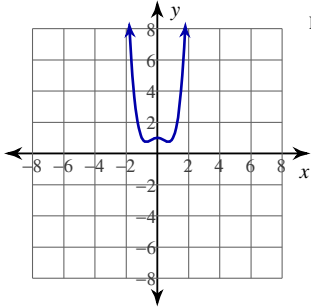
Real Zeros: -1.3

19)



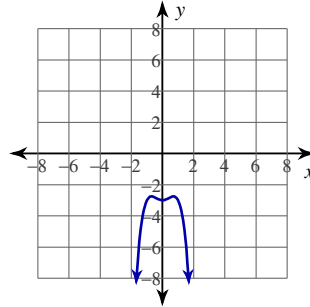
Real Zeros: 0.5, 1.6, 1

20)



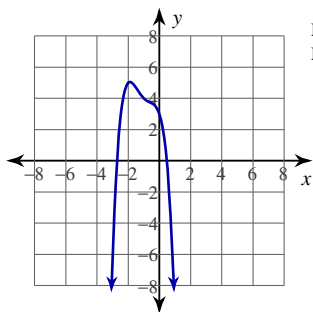
Real Zeros: None

21)



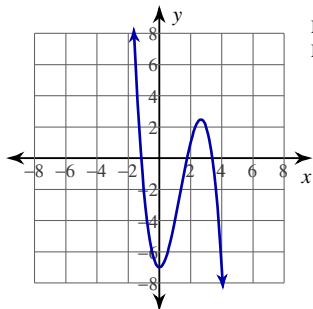
Minima: (0, -3)
Maxima: (-0.7, -2.8)
(0.7, -2.8)

22)



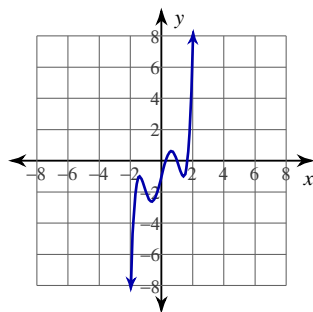
Minima: None
Maxima: $(-1.9, 5.1)$

24)



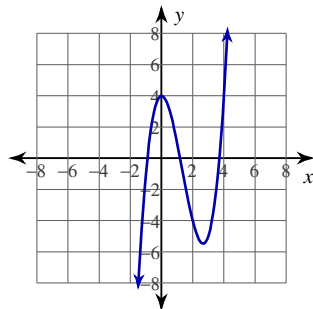
Minima: $(0, -7)$
Maxima: $(2.7, 2.5)$

23)



Minima: $(-0.6, -2.6)$
 $(1.4, -1)$
Maxima: $(-1.4, -1)$
 $(0.6, 0.6)$

25)



Minima: $(2.7, -5.5)$
Maxima: $(0, 4)$