[−10, 10] × [−4, 12] means Xmin=−10, Xmax=10, Ymin=−4, Ymax=12

The complete graph of a function shows
• the y-intercept of the graph
• all the x-intercepts of the graph
• all the local maximums and local minimums of the graph
• the end behavior of the graph

1. For each of the following, (i) enter the function into your calculator, (ii) set the window using the designated parameters, and (iii) carefully sketch the result.

(a) \( y = (x - 3)^2 - 2 \) \([-10, 10] \times [-10, 10] \) (ZStandard on the [ZOOM] menu.)

(b) \( y = (x - 3)^2 - 2 \) \([-4.7, 4.7] \times [-3.1, 3.1] \) (ZDecimal on the [ZOOM] menu.)

(c) \( y = (x - 3)^2 - 2 \) \([-1, 7] \times [-3, 11] \)
Graphing Calculator I: Setting the Window

(d) \[ y = -\frac{1}{10}x^3 + x^2 + \frac{27}{10}x - \frac{18}{5} \] \quad \([-10, 10] \times [-10, 10]

(e) \[ y = -\frac{1}{10}x^3 + x^2 + \frac{27}{10}x - \frac{18}{5} \] \quad \([-6, 15] \times [-8, 40] \quad \text{(Set Yscl=4)}

(f) \[ y = x^5 + 6x^4 - 192x^3 - 866x^2 + 6351x + 7020 \] \quad \([-15, 15] \times [-100000, 100000]

(g) \[ y = \frac{-5x}{x^2 - 3x - 4} \] \quad \text{Try ZStandard and then} \([-9.4, 9.4] \times [-6.2, 6.2]\]
2. For each of the following, sketch the complete graph of the function. Be sure to indicate the window setting you chose.

(a) $y = -2x^2 - 19x + 24$  

(Hint: There are two $x$-intercepts.)

(b) $y = |x^2 + 2x - 35|$.  

(Hint: To access the absolute value function on your calculator, \textit{MATH} $\rightarrow$ \textit{NUM} $\rightarrow$ \textit{abs}.)

(c) $y = (x + 12)(x + 5)(x - 3)(x - 10)$  

(Hint: There are four $x$-intercepts and some \textit{really} big numbers.)
(d) $y = x^5 + 5x^4 - 5x^3 - 25x^2 + 4x + 20$  
    (Hint: There are five x-intercepts.)

(e) $y = \frac{5}{x-3}$

(f) $y = \frac{2x}{x^2-4}$

(g) $y = \frac{2x}{x^2+4}$  
    (Hint: Be sure to adjust Ymin and Ymax to get a good view of the graph.)