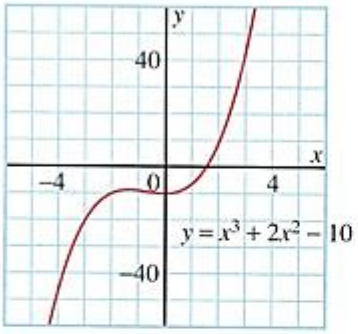
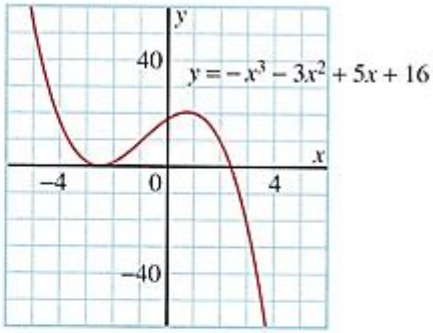
1. Use the graph to estimate the zero(s) of each function.

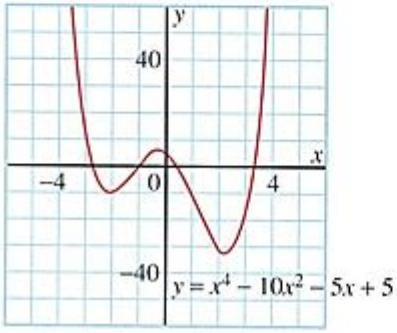
a) $f(x) = x^3 + 2x^2 - 10$



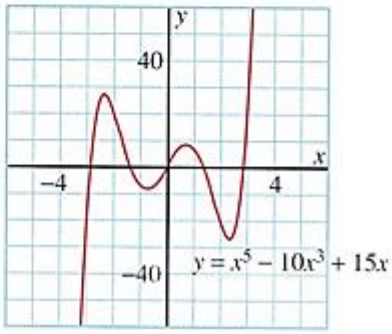
b) $g(x) = -x^3 - 3x^2 + 5x + 16$



c) $h(x) = x^4 - 10x^2 - 5x + 5$



d) $p(x) = x^5 - 10x^3 + 15x$



2c) Solve *graphically*: $x^3 + 2x = 5x - 10$

3d) Solve *graphically*: $x^3 - 10x - 24 = 0$

4b) Use a graph to approximate the zeros of the function: $q(x) = x^3 + x - 15$

6. a) In exercise 1b, can you be sure there are two equal negative zeros? Explain.
   b) If there are not two equal negative zeros, what other possibilities are there for this function?
   c) How could you tell which possibility in part b is correct? Explain.

7. Consider the equation $x^2 - 2x = 20$.
   a) Solve the equation by graphing $y = x^2 - 2x$ and $y = 20$ and using the points of intersection to determine the roots.
   b) Solve the equation by graphing $y = x^2 - 2x - 20$ and using the x-intercepts to determine the roots.
   c) Compare the methods in parts a and b.
      i) Does one method give more accurate results than the other? Explain.
      ii) Is one method more reliable than the other? Explain.

1. Estimates may vary.
   a) 1.7 b) −2.3, 2.3 c) −2.7, −1, 0.5, 3.3 d) −2.8, −1.4, 0, 1.5, 2.9
2 c) −2.6 3d) 4 4b) 2.3
6. a) No; explanations may vary. b) Two unequal negative zeros, or no zeros in this region.
7. a) −3.58, 5.58 b) −3.59, 5.58
   c) i) No. The two give the same result.
      ii) The second method may be more reliable, since only one graph is drawn.