Classwork Graphs of Higher Degree Polynomials

Please work all problems on a separate sheet of paper.

In exercises 1 – 11, sketch the graph of the polynomial function & determine the end behavior, x-intercept(s) and their multiplicity, and the y-intercept.

1. $f(x) = (x+4)(x+2)(x-1)$
2. $f(x) = -x(x-2)(x+1)^2$
3. $f(x) = x^3 + x^2 - 2x$
4. $f(x) = x^3 + 2x^2 - x - 2$
5. $f(x) = x^3(x+2)^2(x-1)$
6. $f(x) = -2x^4 + 2x^3$
7. $f(x) = -x^3 - 4x^2$
8. $f(x) = x^3 + 2x^2 + x$
9. $f(x) = x^4 - 4x^3 + 4x^2$
10. $f(x) = x^4 - 5x^2 + 4$
11. $f(x) = (x+1)(2x-1)^2$