Information from a factored equation:

For each of the included graphs:

1. What is the value of the leading coefficient?
2. Where does the graph start and where does it finish?
3. What is the value of the y-intercept?
4. Sketch the graph (do not worry about the imaginary roots)
5. What are the values of the x-intercepts?
6. How many positive real roots exist?
7. How many negative real roots exist?
8. Does there appear to be imaginary (complex) roots?
9. How many times does the graph change directions?
10. How many peaks and valleys exist?
11. What is the possible degree of the function?
12. What are the factors that make up the function?
13. What is the multiplicity of each factor?

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