Factor the following: Be sure to factor out common values first.

1. $3 x+18$
2. $x^{2}+10 x+21$
3. $x^{2}-2 x-15$
4. $x^{2}+4 x-5$
5. $x^{2}-81$
6. $16 x^{2}-36$
7. $2 x^{2}+11 x+15$
8. $25 x^{8}-36 y^{16}$

Solve the following using any method. (Watch out for standard form)
10. $2 x^{2}-16=0$
11. $\mathrm{x}^{2}-\mathrm{x}-2=0$
12. $x^{2}-3 x=-5$
13. $x^{2}-100=0$
14. $8 x-24=0$
15. $x^{2}-6 x+9=0$
15. $4 x^{2}-12 x+9=0$
16. $\frac{x^{2}}{6}+5=11$
17. In your own words what is the purpose of the discriminant?
18. In your own words what do the solutions of a quadratic function represent?
19. What are 3 additional terms that represent an $x$-intercept?

