Preface

Here are a set of problems for my Algebra notes. These problems do not have any solutions available on this site. These are intended mostly for instructors who might want a set of problems to assign for turning in. I try to put up both practice problems (with solutions available) and these problems at the same time so that both will be available to anyone who wishes to use them.
**Lines**

For problems 1 – 5 determine the slope of the line containing the two points and sketch the graph of the line.

1. \((2,10), (2,14)\)
2. \((-6,0), (-1,3)\)
3. \((2,12), (6,10)\)
4. \((-5,7), (1,-11)\)
5. \((-1,-6), (4,-6)\)

For problems 6 – 12 write down the equation of the line that passes through the two points. Give your answer in point-slope form and slope-intercept form.

6. \((2,10), (2,14)\)
7. \((-6,0), (-1,3)\)
8. \((2,12), (6,10)\)
9. \((-5,7), (1,-11)\)
10. \((-1,-6), (4,-6)\)
11. \((0,10), (4,2)\)
12. \((-9,2), (3,24)\)

For problems 13 – 17 determine the slope of the line and sketch the graph of the line.

13. \(6x - y = 8\)
14. \(y + 2x = -3\)
15. \(3x - y = 1\)
16. $5y + 4x = 7$

17. $6y - 13x = -4$

For problems 18 - 20 determine if the two given lines are parallel, perpendicular or neither.

18. The line containing the two points $(0,0), (3, 18)$ and the line containing the two points $(-1, -5), (1, 7)$.

19. $y - 4x = 9$ and $4y - x = -3$

20. $y = \frac{2}{3}x - 4$ and the line containing the two points $(-4, 7), (2, -2)$

21. Find the equation of the line through $(6, -1)$ and is parallel to the line $9x + 2y = 1$.

22. Find the equation of the line through $(6, -1)$ and is perpendicular to the line $9x + 2y = 1$.

23. Find the equation of the line through $(-4, -9)$ and is parallel to the line $-8y - x = 43$.

24. Find the equation of the line through $(-4, -9)$ and is perpendicular to the line $-8y - x = 43$. 