

Section 5.6 – Some Special Cases

Problem Set 1

Determine if the following lines are vertical, horizontal or neither.

- | | | |
|----------------|--------------------------|----------------------|
| 1. $y = -2$ | 2. $y + \frac{1}{2} = 0$ | 3. $x + 2y = 2y - 1$ |
| 4. $x + y = 3$ | 5. $-2x = 9$ | 6. $4 - x = 0$ |
| 7. $3 = y$ | 8. $3y = 8 + 1$ | 9. $3y = 4x + 2$ |

Find the equations of the lines through the following pairs of points.

- | | | |
|---|----------------------------------|--------------------------------|
| 10. $(-2, 1)$ and $(-5, 1)$ | 11. $(6, 0)$ and $(7, 0)$ | 12. $(3, 4)$ and $(3, 5)$ |
| 13. $\left(\frac{2}{3}, \frac{1}{5}\right)$ and $\left(\frac{2}{3}, \frac{4}{5}\right)$ | 14. $(-2.1, 1)$ and $(-2.1, -5)$ | 15. $(7.3, 1)$ and $(7.3, -5)$ |

Classify the following pairs of lines as parallel, perpendicular or neither.

- | | | |
|-------------------------------------|-------------------------------------|--|
| 16. $y = 3x + 5$ and $y = 3x + 2$ | 17. $-3x + y = 2$ and $x = 1$ | 18. $y = -3x + 4$ and $y = 3x + 8$ |
| 19. $x = 9$ and $y = 2$ | 20. $3y + 2x = 4$ and $y = -4x + 1$ | 21. $y - 2x = 5$ and $y = 2x - 4$ |
| 22. $y = -4x + 2$ and $3y - x = 12$ | 23. $-4x + y = 0$ and $8x - 2y = 5$ | 24. $4x + 4y = 0$ and $4x + 8y = 1$ |
| 25. $x + y = 5$ and $x - y = 4$ | 26. $x + 3y = -1$ and $x - 3y = 8$ | 27. $y = 2x + 5$ and $y = -\frac{1}{2}x - 3$ |

Find the line parallel to the given line that passes through the given point.

- | | | |
|--------------------------------|---------------------------------|------------------------------------|
| 28. $y = -2x + 1$ and $(2, 4)$ | 29. $2y + 2x = 5$ and $(-2, 0)$ | 30. $y = 3.1x - 3$ and $(2.1, -1)$ |
| 31. $x = 5$ and $(-2, 1)$ | 32. $3y + x = 3$ and $(0, 3)$ | 33. $4y + 8x = 2$ and $(1, -2)$ |

Find the line perpendicular to the given line that passes through the given point.

- | | | |
|---------------------------------|--------------------------------------|--------------------------------|
| 34. $y = -x + 1$ and $(1, 2)$ | 35. $y = -2.1x - 4$ and $(2.2, 1.3)$ | 36. $y + 3x = 4$ and $(-1, 0)$ |
| 37. $-2y + 2x = 5$ and $(2, 3)$ | 38. $2y - 3x = 1$ and $(0, -1)$ | 39. $y = -2$ and $(2, 2)$ |