Finding Equations of Lines

The easiest, most consistent way of finding an equation of a line is to use the Point-Slope form of a line; $y - y_1 = m (x - x_1)$. To find an equation of a line, you need to know a point the line passes through and the slope and substitute those values into that equation. That information can be given to you explicitly or can be implicitly.

1. Find an equation of a line that passes through (2, 3) and has slope 4.

2. Find an equation of a line that passes through (1, 7) and has slope 3.

3. Find an equation of a line that passes through (4, –2) and has slope 5.

4. Find an equation of a line that passes through (–3, – 7) and has slope 2.

5. Find an equation of a line that passes through (–3, 5) and has slope 1.

6. Find an equation of a lone that passes through (2, 4) and (5, 16).

7. Find an equation of a line that passes through (4, 9) and (6, 17).

8. Find an equation of a line that passes through (–2, 6) and (4, –12).

9. Find an equation of a line that passes through (3, 5) and is parallel to $y = 2x – 1$.

10. Find an equation of a line that passes through (3, –7) and is parallel to $y = –4x + 2$.

11. Find an equation of a line that passes through (2, 0) and is parallel to $y = 7x – 2$.

12. Find an equation of a line that passes through (0, –4) and has slope 5.

13. Find an equation of a line with y-intercept –4 and slope 5.

14. Find an equation of a line that passes through (2, 1) and is perpendicular to $y = 3x + 5$

15. Find an equation of a line that passes through (3, 4) and is perpendicular to $y = 2/3\ x + 5$