1. Determine whether the graphs of each pair of equations are parallel, perpendicular or neither.
   a) \( y = 3x + 4 \)
      \( y = 3x + 7 \)
   b) \( y = -4x + 1 \)
      \( 4y = x + 3 \)
   c) \( y = 4 \)
      \( 4y = 6 \)
   d) \( y = 2x - 5 \)
      \( y = 5x - 5 \)
   e) \( y = -\frac{1}{3}x + 2 \)
      \( y = 3x - 5 \)
   f) \( x = 1 \)
      \( y = 7 \)

2. Find the equation of a line parallel to \( y = 3x - 4 \), passing through the point \((-1, 0)\).

3. Find the equation of a line perpendicular to \( y = 2x + 4 \), passing through the point \((2, 5)\).

4. Find the equation of a line parallel to \( x + y + 1 = 0 \), passing through the point \((-2, -1)\).

5. Find the equation of a line perpendicular to \( 6x - y - 11 = 0 \), passing through the point \((-5, -1)\).

6. Find the equation of a line parallel to \( 5x + 6y - 2 = 0 \), passing through the point \((-3, -7)\).

7. Find the equation of a line perpendicular to \( 2x + 5y + 3 = 0 \), passing through the point \((-2, -3)\).

8. Find the equation of a line parallel to \( x = 4 \), passing through the point \((-6, 1)\).

9. Find the equation of a line perpendicular to \( x = -2 \), passing through the point \((7, 2)\).

10. Find the equation of a line perpendicular to \( y = 7x - 6 \), with the same \( y \)-intercept as \( y = -2x + 4 \).

11. Find the equation of a line parallel to \( x = 6 \), with the same \( x \)-intercept as \( y = -\frac{2}{3}x - 4 \).

12. Find the equation of a line perpendicular to \( 5x - 2y + 8 = 0 \), with the same \( x \)-intercept as the line \( x - 5y - 5 = 0 \).
Answers

1. a) Parallel   b) Perpendicular   c) Parallel   d) Neither   e) Perpendicular
   f) Perpendicular
2. \( y = 3x + 3 \)
3. \( y = -\frac{1}{2}x + 6 \)
4. \( y = -x - 3 \)
5. \( y = -\frac{1}{6}x - \frac{11}{6} \)
6. \( y = -\frac{5}{6}x - \frac{57}{6} \)
7. \( y = \frac{5}{2}x + 2 \)
8. \( x = -6 \)
9. \( y = 2 \)
10. \( y = -\frac{1}{2}x + 4 \)
11. \( x = -6 \)
12. \( y = -\frac{2}{5}x + 2 \)