

1. The equation of line l_1 is $y = -\frac{1}{3}x + \frac{3}{4}$,
and the equation of line l_2 is $y = 3x + \frac{2}{3}$.

Which of the following statements is true? Circle the right answer.

- a) l_1 is perpendicular to l_2 .
 - b) l_1 is parallel to l_2 .
 - c) l_1 coincides with l_2 .
 - d) l_1 is neither perpendicular nor parallel to l_2 .
2. Determine the equation of the line that passes through point $(-2,0)$ and that is parallel to the line whose equation is $x + \frac{y}{3} = -1$. Show each step in the solution.

3. What is the equation of the line that passes through point $(\frac{2}{3}, \frac{1}{4})$ and that is perpendicular to the line whose equation is $\frac{2x}{3} = \frac{-y}{4}$

Show each step in the solution.

8. The equation of line l_1 is $y = 2x - \frac{1}{2}$ and the equation of line l_2 is $y = 2x + 2$.

Which of the following statements is true? Circle the right answer.

- a) l_1 is perpendicular to l_2
- b) l_1 is parallel to l_2
- c) l_1 coincides with l_2
- d) l_1 is neither perpendicular nor parallel to l_2

9. Determine the equation of the line passing through point $(-1, 0)$ and that is parallel to the line whose equation is $x + \frac{y}{5} = -2$.

10. Determine the equation of the line passing through point $(-\frac{1}{5}, \frac{5}{6})$ and that is perpendicular to the line whose equation is $\frac{3x}{5} = \frac{-y}{2}$. Show each step in the solution.