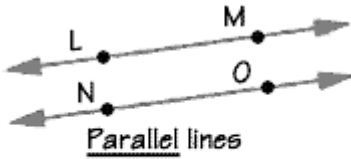


Worksheet 4-5: Parallel Lines

Parallel Lines (never intersect one another)



\overrightarrow{LM} is parallel to \overrightarrow{NO}
 $\overrightarrow{LM} \parallel \overrightarrow{NO}$

Parallel lines:
 Lines that lie in the same plane but don't intersect.

- Slopes of parallel lines are the **same**.
- The y-intercepts of parallel lines are different.
- They have no common points.

1. Circle the line that is parallel to $y = 4x + 1$.

$y = -4x + 1$

$y = 4x - 7$

$y = \frac{1}{4}x + 3$

$y = 2x + 1$

2. Circle the lines that are parallel to $y = -2x + 8$.

$y = 2x + 8$

$y = \frac{1}{2}x + 8$

$y = -2x$

$y = -\frac{1}{2}x + 1$

$y = \frac{1}{2}x - 24$

$y = -2x - 111$

$y = 2x$

$y = 2x - 9$

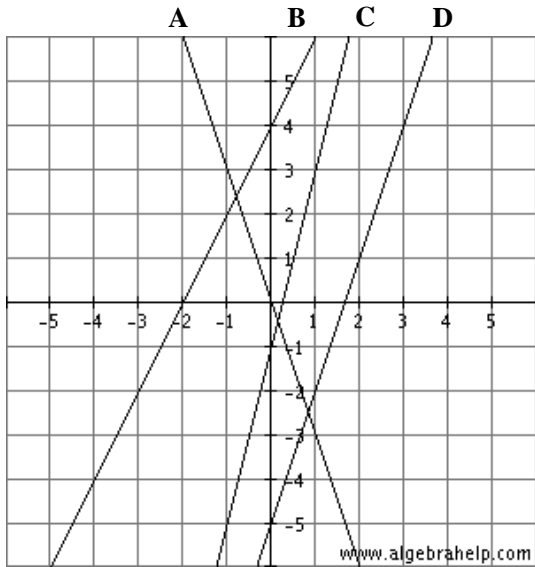
3. Line k and l pass through the points given below. Determine if k and l are parallel.

(a) Line k : (2, 3), (4, 4) Line l : (3, 6), (-7, 1)

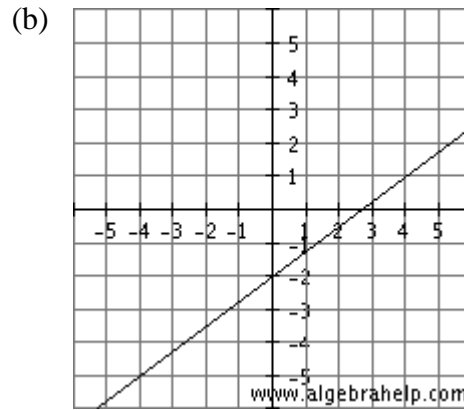
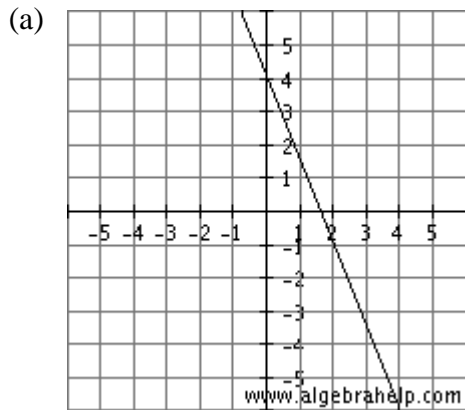
(b) Line k : (2, 5), (4, 11) Line l : (0, 4), (-9, 7)

(c) Line k : (4, 3), (6, 7) Line l : (1, -2), (0, 0)

4. Write the equation of a line that is parallel to each line. Hint: state the equation of each line first.



5. Draw a line that is parallel to each given line and state its equation.



Answers: 1. $y = 4x - 7$; 2. $y = -2x$, $y = -2x - 111$; 3. (a) $m_k = \frac{1}{2}$, $m_l = \frac{1}{2}$, parallel,

(b) $m_k = 3$, $m_l = -\frac{1}{3}$, not parallel, (c) $m_k = 2$, $m_l = -2$, not parallel;

4. A: $m = 3$, B: $m = 2$, C: $m = 4$, D: $m = 3$; 5. (a) $m = -\frac{5}{2}$, (b) $m = \frac{3}{4}$