

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

Classify Lines from Equations

Classify each pair of distinct lines as parallel, perpendicular, or intersecting but not perpendicular.

1. Classify the two lines.

- 1) $y = \frac{1}{11}x$
2) $y = \frac{1}{11}x - 1$

Classification: _____

2. Classify the two lines.

- 1) $y = -10$
2) $x = 1$

Classification: _____

3. Classify the two lines.

- 1) $y = \frac{8}{7}x - 4$
2) $y = -\frac{3}{2}x - 3$

Classification: _____

4. Classify the two lines.

- 1) $y = \frac{3}{7}x - 10$
2) $3x - 7y = -21$

Classification: _____

5. Classify the two lines.

- 1) $11x - 3y = 3$
2) $11x - 12y = -12$

Classification: _____

6. Classify the two lines.

- 1) $7x - 3y = -30$
2) $y = -\frac{3}{7}x - 2$

Classification: _____

7. Classify the two lines.

- 1) $x = 0$
2) $x = -5$

Classification: _____

8. Classify the two lines.

- 1) $9x - 11y = 132$
2) $y = -\frac{5}{3}x + 11$

Classification: _____

Classify Lines from Equations

Worked Answer Key

Classify each pair of distinct lines as parallel, perpendicular, or intersecting but not perpendicular.

1. Classify the two lines.

1) $y = \frac{1}{11}x$

2) $y = \frac{1}{11}x - 1$

The slopes are $1/11$ and $1/11$.
Equal slopes on distinct lines mean parallel.

Answer: parallel

2. Classify the two lines.

1) $y = -10$

2) $x = 1$

The slopes are 0 and undefined.
One line is horizontal and the other is vertical, so they are perpendicular.

Answer: perpendicular

3. Classify the two lines.

1) $y = \frac{8}{7}x - 4$

2) $y = -\frac{3}{2}x - 3$

The slopes are $8/7$ and $-3/2$.
The slopes are neither equal nor negative reciprocals.

Answer: intersecting but not perpendicular

4. Classify the two lines.

1) $y = \frac{3}{7}x - 10$

2) $3x - 7y = -21$

The slopes are $3/7$ and $3/7$.
Equal slopes on distinct lines mean parallel.

Answer: parallel

5. Classify the two lines.

1) $11x - 3y = 3$

2) $11x - 12y = -12$

The slopes are $11/3$ and $11/12$.
The slopes are neither equal nor negative reciprocals.

Answer: intersecting but not perpendicular

6. Classify the two lines.

1) $7x - 3y = -30$

2) $y = -\frac{3}{7}x - 2$

The slopes are $7/3$ and $-3/7$.
The slopes are negative reciprocals, so the lines are perpendicular.

Answer: perpendicular

7. Classify the two lines.

1) $x = 0$

2) $x = -5$

The slopes are undefined and undefined.
Equal slopes on distinct lines mean parallel.

Answer: parallel

8. Classify the two lines.

1) $9x - 11y = 132$

2) $y = -\frac{5}{3}x + 11$

The slopes are $9/11$ and $-5/3$.
The slopes are neither equal nor negative reciprocals.

Answer: intersecting but not perpendicular