Write the Linear Equation

Parallel lines - classroom notes

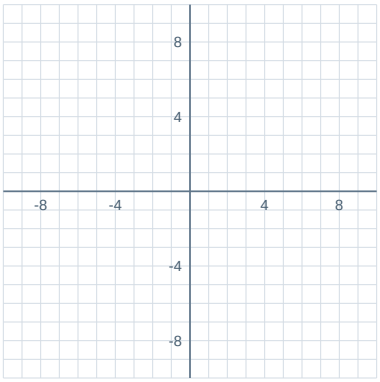
Name: _____ Hour: _____ Date: _____

Slide 1 | P1 - Draw, discuss, and write

Write the line parallel to the blue line through the point.

$y = \frac{2}{3}x - 4 \qquad P = (6, -2)$

Graph the given line. Plot P. Sketch and label the new line.



Parallel lines in a plane _____.

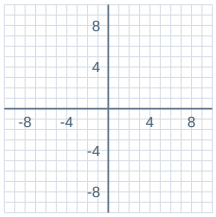
New equation: _____

Slide 2 - Compare slopes; complete all three

Graph each given line and point. Sketch the new line. Record both slopes and its equation.

P2a $y = \frac{2}{3}x - 4$

$P = (3, 1)$

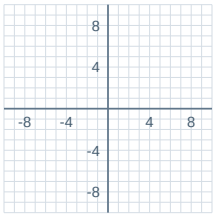


Blue m: _____ New m: _____

y = _____

P2b $y = -\frac{1}{2}x + 3$

$P = (4, 0)$

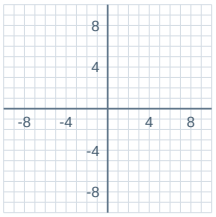


Blue m: _____ New m: _____

y = _____

P2c $y = \frac{3}{2}x - 1$

$P = (2, 1)$



Blue m: _____ New m: _____

y = _____

Slide 3 | P3 - Find the exact intercept

$y = \frac{2}{3}x - 4 \qquad P = (4, -2)$

Distinct nonvertical parallel lines have the _____ slope.

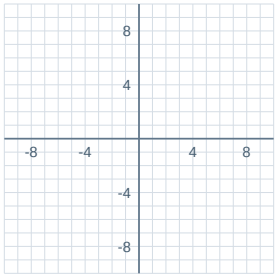
1. Determine the given slope: _____ 2. New slope: _____

3. Substitute the point and new slope: $y - y_1 = m_{new}(x - x_1)$

_____

4. Distribute and rewrite in slope-intercept form: _____

Point check: _____ Slope check: _____



Slide 4 | P4 - Try it independently

$y = -\frac{2}{3}x + 1 \qquad P = (2, 1)$

Use the same four steps.

y = _____

Check: slope and point.

Write the Linear Equation

Perpendicular lines - classroom notes

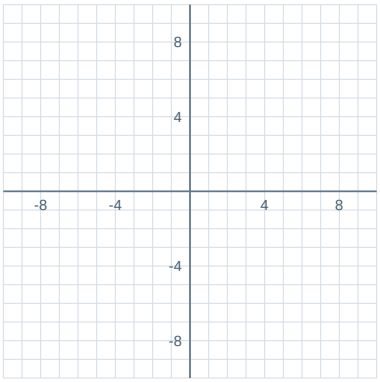
Name: _____ Hour: _____ Date: _____

Slide 5 | T5 - Draw, discuss, and write

Write the line perpendicular to the blue line through the point.

$y = \frac{2}{3}x - 4 \qquad P = (6, -2)$

Graph the given line. Plot P. Sketch and label the new line.



Right 3, up 2 becomes right ___, down ___.

Perpendicular lines intersect at a _____.

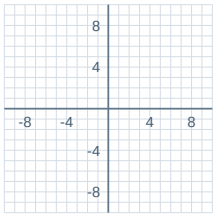
New equation: _____

Slide 6 - Compare slopes; complete all three

Graph each given line and point. Sketch the new line. Record both slopes and its equation.

T6a $y = \frac{2}{3}x - 4$

$P = (2, 1)$

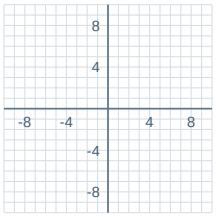


Blue m: _____ New m: _____

y = _____

T6b $y = -\frac{1}{2}x + 3$

$P = (2, 1)$

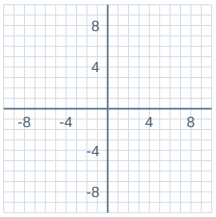


Blue m: _____ New m: _____

y = _____

T6c $y = \frac{3}{2}x - 1$

$P = (3, 0)$



Blue m: _____ New m: _____

y = _____

Slide 7 | T7 - Find the exact intercept

$y = \frac{2}{3}x - 4 \qquad P = (3, 1)$

$m_{new} = -\frac{1}{m_{given}} \qquad m_{new} m_{given} = -1$

1. Determine the given slope: _____

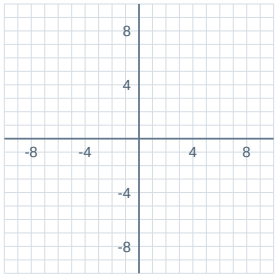
2. New slope: _____

3. Substitute the point and new slope: $y - y_1 = m_{new}(x - x_1)$

_____

4. Distribute and rewrite in slope-intercept form: _____

Point check: _____ Slope check: _____



Slide 8 | T8 - Try it independently

$y = -\frac{2}{3}x + 1 \qquad P = (1, 0)$

Use the same four steps.

y = _____

Check: slope and point.