Section 2.5: Equations of Lines

Video 1

General Form	Point-Slope Form	Slope-Intercept Form
$Ax + By = C$	$y - y_1 = m(x - x_1)$	$y = mx + b$

1) Convert the equation to slope-intercept form. Find the slope and *y*-intercept of the line.

a) $6x + 4y = 12$ 　　　　　　　　　　　　　　　b) $3x - 2y = -15$

2) Find the equation of a line whose slope is $-\dfrac{4}{3}$ and passes through the point $(9, -17)$ using …

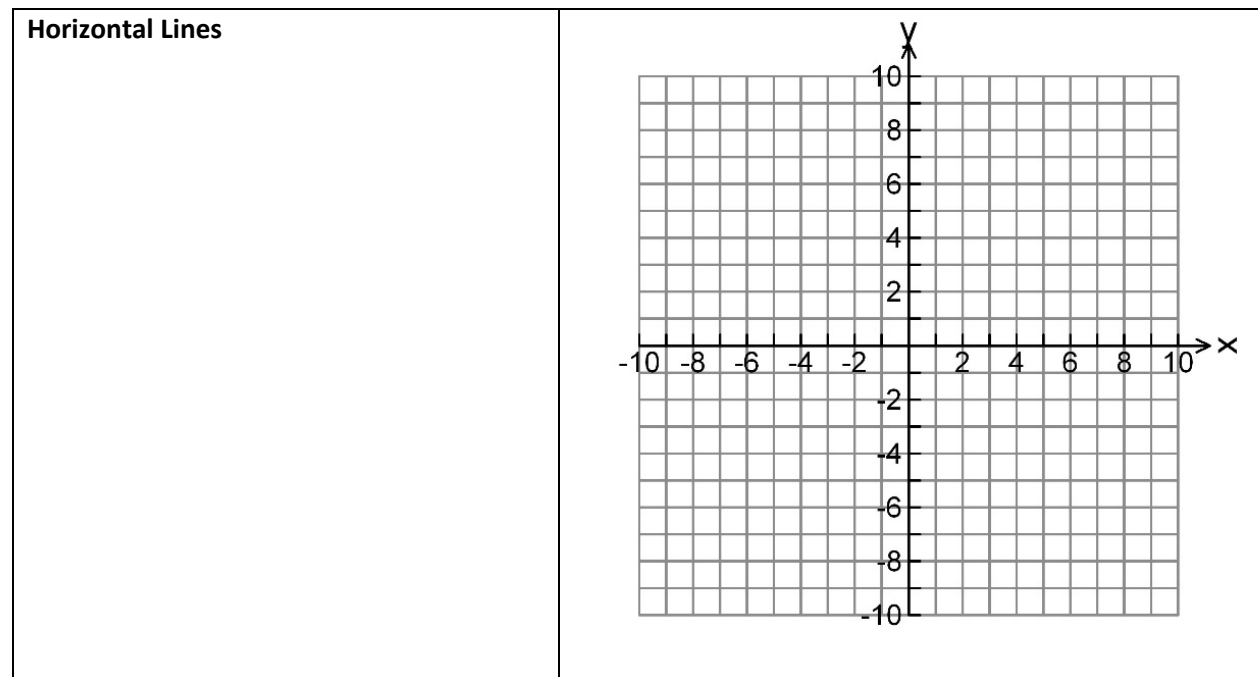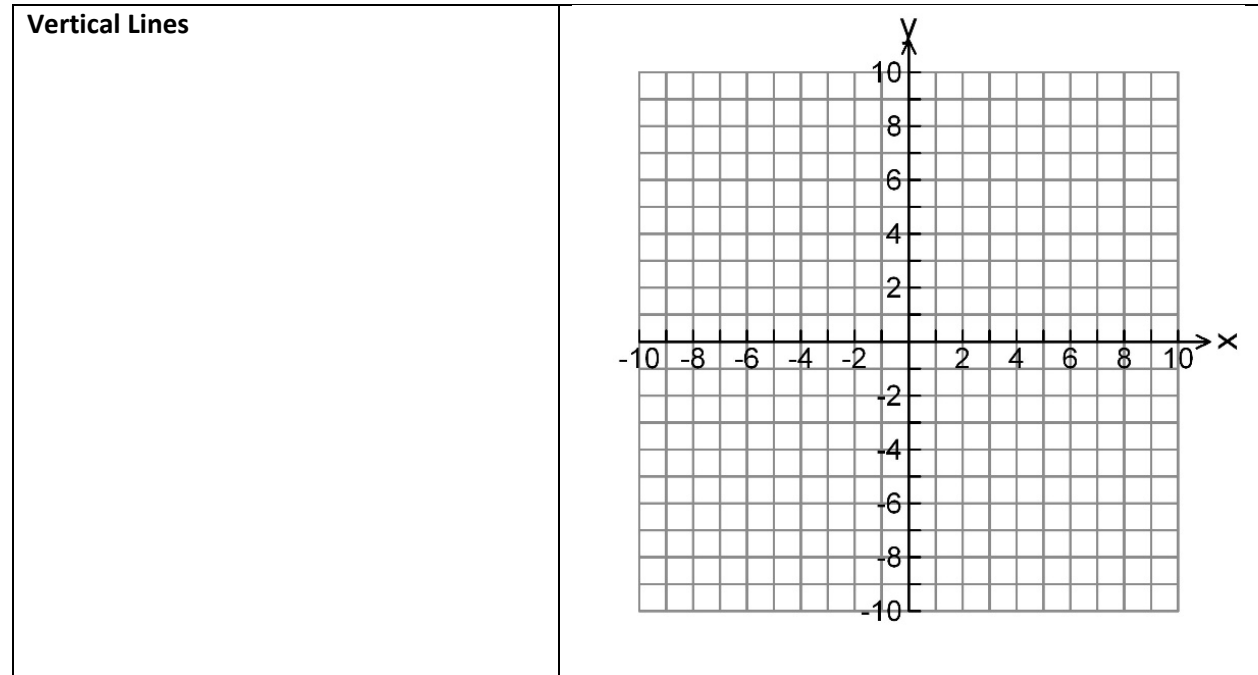a) Point-slope form 　　　　　　　　　　　　　b) Slope-intercept form

Video 2

3) Find the equation of the line that passes through the points $(1,5)$ and $(3,11)$.

4) Find the equation of the line that passes through the points $(-2,6)$ and $(-5,-13)$.

Video 3

Vertical Lines	

Horizontal Lines	

Video 4

- Two non-vertical lines are **parallel** if they have the same slope.
  Vertical lines are parallel to other vertical lines.
- Two non-vertical lines are **perpendicular** if their slopes are negative reciprocals.
  Vertical lines are perpendicular to horizontal lines.

5) Find the equation of a line that is parallel to $y = 2x - 5$ that passes through the point $(1,8)$.

6) Find the equation of a line that is perpendicular to $5x - 3y = 21$ that passes through the point $(-10,12)$.