Chapter 3.4   Equations of a Line

Standard Form

Slope - Intercept form

Changing Linear Forms

(Eg) Determine the slope & y-intercept of $y = \frac{3}{4}x - 6$

(Eg) Determine the slope & y-intercept of $7x - 8y = 43$

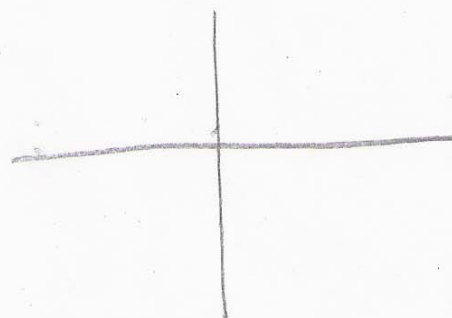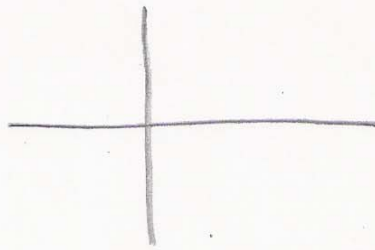## [Method] Graphing using Slope- Intercept

1.

2.

3.

4.

5.

(Eg) Graph $y = \frac{3}{4}x - 6$

(Eg) Graph $7x + 3y = 21$

① Graph $5x + 4y = 20$

|Method| Plot Knowing 2 Points

1.

2.

3.

4.

5.

(Eg) Find the equation of a line passing through $(3,7)$ & $(-4,9)$.

① Find the equation of a line passing through $(2,5)$ & $(6,-7)$.

Point-Slope form

(Eg) Determine the equation of a line with slope -3 passing through the point $(-3,8)$.

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① Determine the equation of a line with slope 5 passing through (4, -7).

[Method] Knowing 2 Points

1.

2.

3.

4.

Eg Determine the equation of a line passing through points (-2, 8) & (4, 9).

Eg Point (4, 9) and $m = \frac{1}{6}$

Chapter 3.5   Graphing Linear Inequalities

Linear inequalities

[Method] Graphing linear Inequalities

1.

2.

3.

(Eg) Graph: $7x + 3y < 21$

(1) Graph: $5x + 4y > 20$

(Eg) Graph: $3x + 8y \leq 14$

(1) Graph: $3x + 5y > 15$

Graphing Vertical or Horizontal lines

(Eg) $y < 4$ (Eg) $x \geq -2$

Graphing Lines with Boundary Points Through Origin

(Eg) $x \geq -3y$

Chapter 3.6   Introduction to Functions

Relation

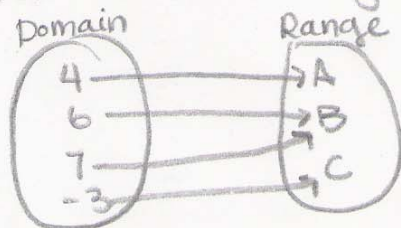(Eg) $\{(3,7), (4,2), (-6,9), (0,0), (-5,-8)\}$

Domain

(Eg)

Range

(Eg)

Graphically the relation is:

(Eg) Define the following relation in ordered pairs.

Domain

Range

4 → A
6 → B
7 → C
-3

Function —

—

(Eg) Determine whether each relation is a function.

ⓐ $\{(-2,8), (-1,1), (0,0), (1,1), (2,8)\}$

ⓑ $\{(5,2), (5,-1), (0,5)\}$

|Method| Vertical line test

  1.

  2.

  3.

Are all linear equations linear functions?

Graphing Linear Functions

  notation

(Eg) $f(x) = 3x + 6$

(Eg) $f(x) = 6x - 2$, find $f(-1)$

Decide whether the equation or inequality defines y as a function of x:

(Eg) $y = 3 - x^2$

(Eg) $x = y^2 - 2$

(Eg) $6x - y < 4$

Find the Domain & Range of a continuous function

(Eg) $y = 3x - 7$

(Eg) $y = x^2 + 4$.

(Eg) $y = 2$