

Introduction to Substitution

(Used to Solve Linear Systems)

Substitution – is an algebraic technique used to determine the point of intersection of two lines.

Examples

Use substitution to determine the point of intersection for each pair of lines.

a) $y = 2x + 3$

$$y = 4x + 1$$

b) $C = 5n + 250$

$$C = 10n$$

c) $2x + y = 1$

$$x = 2y + 8$$

d) $5x + 2y = 9$

$$3x + y = 5$$

Practice – Using Substitution to Solve Linear Systems

For each pair of equations below, use substitution to determine the point of intersection. Verify your answers using DESMOS.

a) $y = 2x - 11$
 $y = -3x + 4$

b) $y = 3x + 7$
 $y = x + 3$

c) $x = y + 3$
 $2x + 3y = 16$

d) $3x + 2y = 1$
 $y = x - 7$

e) $2x + y = 5$
 $3x - 5y = 14$

f) $3x - 2y = -4$
 $x + 2y = 12$

Answers:

a) (3, -5)

b) (-2, 1)

c) (5, 2)

d) (3, -4)

e) (3, -1)

f) (2, 5)