Unit 1: Sequences & Series
1.0 Systems of Equations [Review]

Ex. At a dance recital, there were 220 people. Tickets cost $9 for an adult and $6 for a child. The dance collected $1614 in ticket sales. How many adults and how many children attended the recital?

Let a = adult
c = children

Substitution

$a + c = 220 \Rightarrow c = 220 - a$

$9a + 6c = 1614$

$9a + 6(220 - a) = 1614$
$9a + 1320 - 6a = 1614$
$3a + 1320 = 1614$
$3a = 294$
$a = 98$

$c = 220 - 98$
$= 122$

98 adults & 122 children

Ex. Connor downloaded two orders of games and songs. The first order consisted of five games and four songs for $26. The second order consisted of three games and two songs for $15. All games cost the same amount and all songs cost the same amount. Write a system of linear equations. Then, determine the cost of one song and the cost of one game.

Elimination

Let m = cost/song
g = cost/game

$5g + 4m = 26 \rightarrow 5g + 4m = 26$
$3g + 2m = 15 \xrightarrow{\times 2} -6g + 4m = 30$

$+g = +4$

$3(4) + 2m = 15$
12
$2m = 3$
$m = 3/2 = 1.5$

Cost of a song is $1.50 and cost of a game is $4

Practice: Worksheet 167/169 – alternate between substitution (when appropriate) and elimination
– all work on separate paper