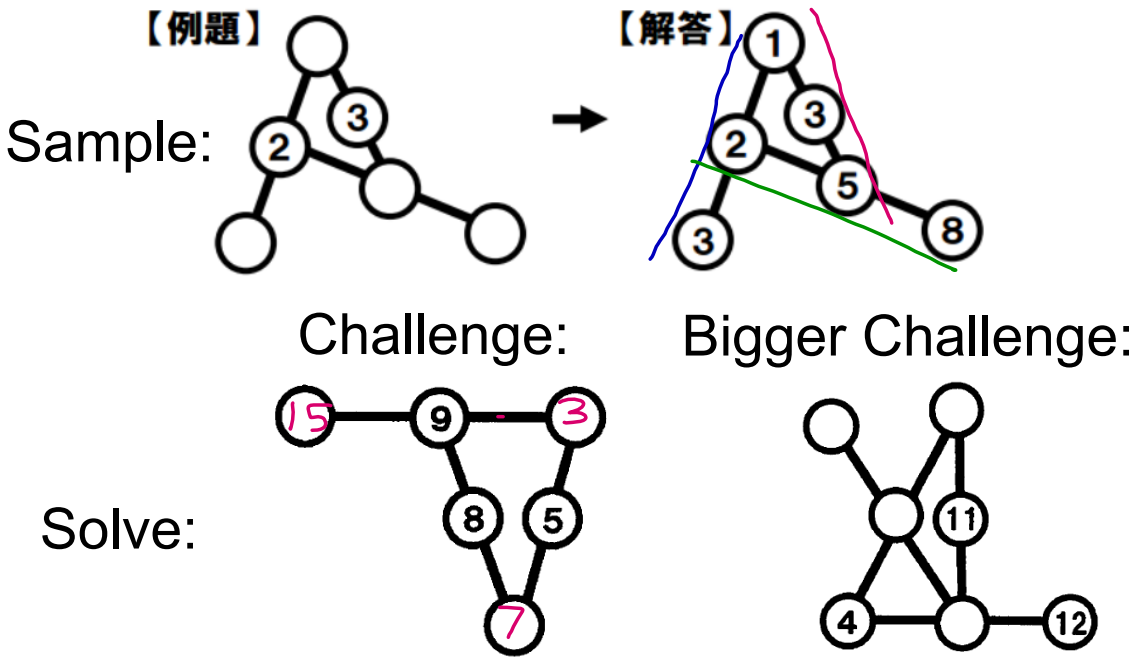

1. Dylan has 31 marbles. Some are red and some are white. The number of red marbles is three more than six times the number of the white marbles.

(a) Define variables for the given situation.

r w → white marbles

red marbles

(b) Write a system of linear equations to represent the situation using the variables from part (a) above.

$r+w=31$ $6w+3=r$

(c) Solve the system of linear equations written in part (b) above.

$r+w=31$

$6w+3=r$

Substitution:

$6w+3+w=31$

$7w+3=31$

$7w=28$

$w=4$

$r+4=31$

$r=27$

Elimination:

$6w+-r=-3$

$w+r=31$

$7w=28$

$w=4$

(d) How many red marbles does Dylan have? How many white marbles does Dylan have?

red = 27

white = 4

2. Tia and Ken each sold snack bars and magazine subscriptions for a school fund-raiser, as shown in the table. Tia earned $132 and Ken earned $190.

Item	Number Sold	
	Tia	Ken
snack bars	16	20
magazine subscriptions	4	6

$132 $190

(a) Define variables for the given situation.

s = cost of snack bars

m = cost of magazine subs

(b) Write a system of linear equations to represent the situation using the variables from part (a) above.

$16s + 4m = \$132$

$20s + 6m = \$190$

$4s + m = 33$

$-4s \quad -4s$

$m = -4s + 33$

(c) Solve the system of linear equations written in part (b) above.

$20s + 6(-4s + 33) = \$190$

$20s - 24s + 198 = 190$

$-4s + 198 = 190$

$-4s = -8$

$s = 2$

$m = -4(2) + 33$

$m = -8 + 33$

$m = 25$

(d) How much does a snack bar cost? How much does a magazine subscription cost?

snack = $2

mag = $25