6.3 : Simultaneous Linear Equations in Two Variables

1. Solve the simultaneous linear equations using the substitution method.

(a) $2m - n = 8$ ——— ①

$4m + 3n = 6$ ——— ②

From ①, $2m - n = 8$

$-n =$

$n =$ ——— ③

Substitute ③ into ② :

$4m + 3(\quad) = 6$

$4m + \quad = 6$

$10m = 6 + 24$

$10m =$

$m =$

Substitute $m = 3$ into ③: $n = 2(\quad) - 8$

$n =$

Therefore, $m =$, $n =$

(b) $5p + 4q = 12$ ——— ①

$p + 2q = 3$ ——— ②

From ②, $p = 3$ ——— ③

Substitute ③ into ① :

$5(\quad) + 4q = 12$

$+4q = 12$

$= 12$

$6q = 15 - 12$

$6q = 3$

$q = -$

Substitute $q = \frac{1}{2}$ into ③: $p = 3 - 2(-)$

$p = 3 - 1$

$p =$

Therefore, $p =$, $q =$

(c) $x + 3y = 6$ ——————— ①

$3x - 2y = 7$ ——————— ②

From ①, $x =$ ——————— ③

Substitute ③ into ① :

$3(\quad) - 2y = 7$

$-2y = 7$

$= -11$

$y =$

Substitute $y = 1$ into ③: $x = 6 - 3(\quad)$

$x =$

Therefore, $x =$, $y =$

Problem Solving Using Substition Method :

Mr Li is four times as old as his son. In five years' time, the sum of their ages will be 60 years. How old are they now?

Let Mr Li's age be x years old and his son is y years old.

Mr Li is four times as old as his son :

$x =$ ——————— ①

Sum of their ages after five years = 60

Mr Li's age + His son's age = 60

$(\quad) + (\quad) = 60$

$= 60$

$x + y =$ ——————— ②

Substitute ① into ② :

$+ y = 50$

$= 50$

$y =$

Substitute $y =$ into ①: $x = 4(\quad)$

$x =$

Therefore, Mr Li is _____ years old and his son is _____ years old.