第二十三課

1. $x - a = b$

   $x = b + a$

   $x = a + b$

2. $2x - a = b$

   $2x = b + a$

   $x = \frac{a+b}{2}$

3. $-x + a = b$

   $-x = b - a$

   $x = a - b$

4. $a = b + x$

   $-x = b - a$

   $x = a - b$

5. $x - 3a = b$

   $x = b + 3a$

   $x = 3a + b$

6. $\frac{x}{2} - a = b$

   $x - 2a = 2b$

   $x = 2a + 2b$

7. $\frac{a}{2} + x = b$

   $a + 2x = 2b$

   $2x = 2b - a$

   $x = \frac{2b-a}{2}$

8. $3x + a = 2x + b$

   $x = b - a$

9. $x - 5a = bx - c$

   $x - bx = -c + 5a$

   $(1 - b)x = 5a - c$

   $x = \frac{5a-c}{1-b}$

10. $ax + b = c + dx$

$ax - dx = c - b$

$(a - d)x = c - b$

$x = \frac{c-b}{a-d}$

11. $\frac{a(x+c)}{b} = d$

$a(x + c) = bd$

$ax + ac = bd$

$ax = bd - ac$

$x = \frac{bd-ac}{a}$

12. $a - bx = cx + d$

$-bx - cx = d - a$

$-(b + c)x = d - a$

$x = \frac{a-d}{b+c}$

13. $a(bx + c) = d$

$abx + ac = d$

$abx = d - ac$

$x = \frac{d-ac}{ab}$

14. $a(bx + c) = d(x + e)$

$abx + ac = dx + de$

$(ab - d)x = de - ac$

$x = \frac{de-ac}{ab-d}$

15. $a(bx + c) = d(x + e) - f$

$abx + ac = dx + de - f$

$(ab - d)x = de - f - ac$

$x = \frac{de-f-ac}{ab-d}$

16. $\frac{x+a}{x-b} = \frac{c}{d}$

$d(x + a) = c(x - b)$

$dx + ad = cx - cb$

$dx - cx = -cb - ad$

$x = \frac{-(cb+ad)}{d-c}$

$x = \frac{bc+ad}{c-d}$

習題

1. $x + a = -b$
2. $2a - x = b$
3. $5x + a = b$
4. $-x + 2b = a$
5. $\frac{x}{3} + a = 2b$
6. $\frac{b}{2} - x = 2a$
7. $3x + \frac{a}{2} = b$
8. $5x + \frac{a}{3} = 2x - b$
9. $ax + b = c$
10. $ax + b = cx + d$
11. $\frac{x}{a} + c = x + b$
12. $\frac{x+a}{x-b} = c$
13. $c(x - a) - (x - b) = d$
14. $\frac{x-a}{c} = \frac{x-d}{b}$
15. $ax - b(x + c) = d(x + f)$

答案

1. $x = -a - b$
2. $x = 2a - b$
3. $x = \frac{b-a}{5}$
4. $x = -a + 2b$
5. $x = -3a + 6b$
6. $x = -2a + \frac{b}{2}$
7. $x = \frac{-a+2b}{6}$
8. $x = -\frac{a+b}{3}$
9. $x = \frac{-b+c}{a}$
10. $x = \frac{-b+d}{a-c}$
11. $x = \frac{-ab+ac}{a-1}$
12. $x = \frac{a+bc}{c-1}$
13. $x = \frac{ac-b+d}{c-1}$
14. $x = \frac{ab+cd}{b-c}$
15. $x = \frac{bc+df}{a-b-d}$