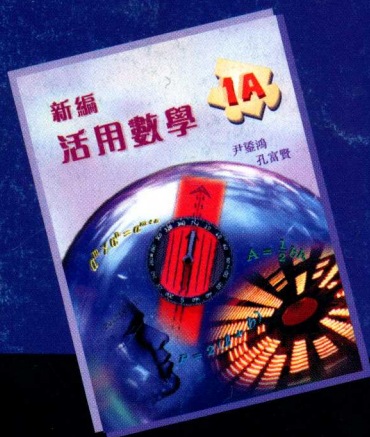




新編

活用數學

1A

學習指引



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課本提供：

目錄中單數题目的詳細題解



基礎算術

練習 I (第 5 頁)

1. (a) $6 + 8 = \underline{14}$

(b) $25 - 9 = \underline{16}$

(c) $14 \times 7 = \underline{98}$

(d) $48 \div 6 = \underline{8}$

3. (a) $15 + 3 \times 4 = 15 + 12$
 $= \underline{27}$

(b) $7 - 18 \div 3 = 7 - 6$
 $= \underline{1}$

5. (a) $16 + 5 = 21$

$\therefore$ 所求的結果是奇數。

(b) $8 + 6 \div 3 = 8 + 2$
 $= 10$

$\therefore$ 所求的結果是偶數。

(c) $2 \times 5 + 7 = 10 + 7$
 $= 17$

$\therefore$ 所求的結果是奇數。

(d) $4 - 9 \div 3 = 4 - 3$
 $= 1$

$\therefore$ 所求的結果是奇數。

7. (a) 最先三個自然數的和 $= 1 + 2 + 3$
 $= \underline{6}$

(b) 4 以後的首三個偶數的積
 $= 6 \times 8 \times 10$
 $= 48 \times 10$
 $= \underline{480}$

(c) 3 以後的首三個奇數的和 $= 5 + 7 + 9$
 $= \underline{21}$

9. (a) $4 \times (18 - 9) \div 3 = 4 \times 9 \div 3$
 $= 36 \div 3$
 $= \underline{12}$

(b) $48 - 3 \times (7 + 2) = 48 - 3 \times 9$
 $= 48 - 27$
 $= \underline{21}$

(c) $4 \times (9 - 15 \div 3) = 4 \times (9 - 5)$
 $= 4 \times 4$
 $= \underline{16}$

(d) $(8 + 5 \times 4) \div 7 = (8 + 20) \div 7$
 $= 28 \div 7$
 $= \underline{4}$

練習 II (第 10 頁)

1. (a) $4 \times 1 = 4$
 $4 \times 2 = 8$
 $4 \times 3 = 12$
 $4 \times 4 = 16$

$\therefore$ 4 的首 4 個倍數是 4, 8, 12, 16。

(b) $13 \times 1 = 13$
 $13 \times 2 = 26$
 $13 \times 3 = 39$
 $13 \times 4 = 52$

$\therefore$ 13 的首 4 個倍數是 13, 26, 39, 52。

3. 3, 7 和 17 是質數。

5. (a) $2 \overline{) \begin{array}{r} 8 \\ 4 \end{array}} \quad 10 \overline{) \begin{array}{r} 10 \\ 5 \end{array}}$

$\therefore$ L.C.M. $= 2 \times 4 \times 5$
 $= \underline{40}$

(b) $2 \overline{) \begin{array}{r} 18 \\ 9 \end{array}} \quad 24 \overline{) \begin{array}{r} 24 \\ 12 \end{array}}$
 $3 \overline{) \begin{array}{r} 9 \\ 3 \end{array}} \quad 4 \overline{) \begin{array}{r} 12 \\ 4 \end{array}}$

$\therefore$ L.C.M. $= 2 \times 3 \times 3 \times 4$
 $= \underline{72}$

練習 II 題解 (續)

$$\begin{array}{r} 7. \quad 2 \overline{) 4 \quad 6 \quad 9} \\ 3 \overline{) 2 \quad 3 \quad 9} \\ \quad 2 \quad 1 \quad 3 \end{array}$$

$$\therefore \text{L.C.M.} = 2 \times 3 \times 2 \times 3 \\ = \underline{\underline{36}}$$

$$\begin{array}{r} 9. \text{ (a) } 2 \overline{) 24 \quad 36 \quad 84} \\ 2 \overline{) 12 \quad 18 \quad 42} \\ 3 \overline{) 6 \quad 9 \quad 21} \\ \quad 2 \quad 3 \quad 7 \end{array}$$

$$\therefore \text{H.C.F.} = 2 \times 2 \times 3 \\ = \underline{\underline{12}}$$

$$\text{L.C.M.} = 2 \times 2 \times 3 \times 2 \times 3 \times 7 \\ = \underline{\underline{504}}$$

$$\begin{array}{r} \text{(b) } 3 \overline{) 45 \quad 60 \quad 90} \\ 5 \overline{) 15 \quad 20 \quad 30} \\ \quad 3 \quad 4 \quad 6 \end{array}$$

$$\therefore \text{H.C.F.} = 3 \times 5 \\ = \underline{\underline{15}}$$

$$\begin{array}{r} 3 \overline{) 45 \quad 60 \quad 90} \\ 5 \overline{) 15 \quad 20 \quad 30} \\ 2 \overline{) 3 \quad 4 \quad 6} \\ 3 \overline{) 3 \quad 2 \quad 3} \\ \quad 1 \quad 2 \quad 1 \end{array}$$

$$\therefore \text{L.C.M.} = 3 \times 5 \times 2 \times 3 \times 2 \\ = \underline{\underline{180}}$$

練習 III (第 18 頁)

$$\begin{aligned} 1. \text{ 黑貓佔所有貓的分數} &= \frac{3}{3+5} \\ &= \frac{3}{8} \\ &= \end{aligned}$$

$$3. \text{ (a) } \frac{8}{20} = \frac{2}{5}$$

$$\text{(b) } \frac{14}{21} = \frac{2}{3}$$

$$\text{(c) } \frac{8}{32} = \frac{1}{4}$$

$$\text{(d) } \frac{35}{40} = \frac{7}{8}$$

$$5. \text{ (a) } \frac{13}{3} = 4\frac{1}{3}$$

$$\text{(b) } \frac{17}{5} = 3\frac{2}{5}$$

$$7. \quad \frac{1}{6} = \frac{35}{210}$$

$$\frac{1}{5} = \frac{42}{210}$$

$$\frac{1}{7} = \frac{30}{210}$$

$\therefore$ 按量值的遞降序排列的結果是 $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{7}$ 。

$$9. \text{ (a) } \frac{4}{5} \times \frac{6}{7} = \frac{24}{35}$$

$$\begin{aligned} \text{(b) } 1\frac{3}{7} \times \frac{7}{8} &= \frac{10}{7} \times \frac{7}{8} \\ &= \frac{5}{4} \\ &= 1\frac{1}{4} \end{aligned}$$

$$\begin{aligned} \text{(c) } \frac{3}{7} \div \frac{5}{7} &= \frac{3}{7} \times \frac{7}{5} \\ &= \frac{3}{5} \end{aligned}$$

$$\begin{aligned} \text{(d) } 10 \div 3\frac{1}{3} &= 10 \div \frac{10}{3} \\ &= 10 \times \frac{3}{10} \\ &= 3 \end{aligned}$$

$$\begin{aligned} 11. \quad \frac{3}{4} &= \frac{75}{100} \\ \frac{7}{10} &= \frac{70}{100} \\ \frac{18}{25} &= \frac{72}{100} \end{aligned}$$

$\therefore$ 按量值的遞降序排列的結果是 $\frac{3}{4}$, $\frac{18}{25}$,

$$\frac{7}{10}。$$

挑戰題 (第 28 頁)

1. 牙籤的總數 = $3 \times 6 + 5 \times 4$

3.
$$\begin{array}{r} 2 \overline{) 24 \ 30 \ 36 \ 42} \\ 12 \ 15 \ 18 \ 21 \\ \hline 4 \ 5 \ 6 \ 7 \end{array}$$

H.C.F. = 2×3
= 6

∴ 兩旗之間的距離是 6 m。

∴ 他最少要插的區旗的數目 = $\frac{24 + 30 + 36 + 42}{6}$
= $\frac{132}{6}$
= 22



記數系統：十進制

習題 1A (第 39 頁)

1. (a) 五百四十四 = 544
 (b) 八百六十五 = 865
 (c) 三千八百二十六 = 3 826
3. (a) $6 \times 10 + 8 \times 1 = \underline{68}$
 (b) $4 \times 100 + 7 \times 10 + 2 \times 1 = \underline{472}$
 (c) $3 \times 100 + 8 \times 10 + 6 \times 1 = \underline{386}$
5. (a) 二千五百零六 = 2 506
 (b) 八千零七十 = 8 070
 (c) 三萬八千七百二十 = 38 720
7. (a) $1\ 357 = 1\ 000 + 300 + 50 + 7$
 $= \underline{1 \times 1\ 000 + 3 \times 100 + 5 \times 10 + 7 \times 1}$
 (b) $7\ 520 = 7\ 000 + 500 + 20 + 0$
 $= \underline{7 \times 1\ 000 + 5 \times 100 + 2 \times 10 + 0 \times 1}$
 (c) $18\ 034 = 10\ 000 + 8\ 000 + 0 + 30 + 4$
 $= \underline{1 \times 10\ 000 + 8 \times 1\ 000 + 0 \times 100 +}$
 $\underline{3 \times 10 + 4 \times 1}$
9. (a) $6 \times 1\ 000 + 5 \times 100 + 3$
 $= \underline{6 \times 1\ 000 + 5 \times 100 + 0 \times 10 + 3 \times 1}$
 (b) 該數式的值 = 6 503

挑戰題

(第 41 頁)

$$\begin{array}{r} 4 \\ 7\ 6 \overline{) 3\ 0\ 4} \\ \underline{3\ 0\ 4} \\ 0 \end{array}$$

∴ 最小的商是 4。



有向數

習題 2A (第 55 頁)

1. (a) $A = \underline{\underline{+2}}$

$B = \underline{\underline{+4}}$

$C = \underline{\underline{-3}}$

(b) $P = \underline{\underline{-4}}$

$Q = \underline{\underline{-1}}$

$R = \underline{\underline{+1}}$

3. (a) $-3 \leq 5$

(b) $0 \geq -4$

(c) $-2 \geq -4$

5. (a) 由大至小排列的結果是 $-3, -7, -40$ 。

(b) 由大至小排列的結果是 $2, 0, -32$ 。

7. (a) $(+1) - (+5) = +1 - 5$

$= \underline{\underline{-4}}$

(b) $(-1) - (-5) = -1 + 5$

$= \underline{\underline{+4}}$

(c) $(-9) - (-15) = -9 + 15$

$= \underline{\underline{+6}}$

(d) $(-9) - (+15) = -9 - 15$

$= \underline{\underline{-24}}$

9. (a) $(-2.8) + (+7.5) = -2.8 + 7.5$

$= \underline{\underline{+4.7}}$

(b) $(-7.2) + (+2.3) = -7.2 + 2.3$

$= \underline{\underline{-4.9}}$

(c) $\left(-2\frac{1}{2}\right) + \left(-6\frac{1}{2}\right) = -2\frac{1}{2} - 6\frac{1}{2}$

$= \underline{\underline{-9}}$

(d) $\left(-1\frac{1}{2}\right) + (+3) = -1\frac{1}{2} + 3$

$= \underline{\underline{+1\frac{1}{2}}}$

11. (a) $3 - 7 + 12 = -4 + 12$

$= \underline{\underline{+8}}$

(b) $-2 + 4 - 17 = +2 - 17$

$= \underline{\underline{-15}}$

(c) $(+3) - (-6) + (+9) = +3 + 6 + 9$

$= \underline{\underline{+18}}$

(d) $(-7) + (+12) - (+18) = -7 + 12 - 18$

$= \underline{\underline{-13}}$

13. $(-2) + (+5) = -2 + 5$

$= +3$

∴ 小康到達地面上第 3 層樓。

習題 2B (第 61 頁)

1. (a) $(+3) \times (-7) = -(3 \times 7)$

$= \underline{\underline{-21}}$

(b) $(-5) \times (+5) = -(5 \times 5)$

$= \underline{\underline{-25}}$

(c) $(-13) \times (-3) = +(13 \times 3)$

$= \underline{\underline{+39}}$

(d) $(-20) \times (0) = 0$

3. (a) $(-8)(-5) = +(8 \times 5)$

$= \underline{\underline{+40}}$

(b) $\left(-\frac{1}{3}\right)(+9) = -\left(\frac{1}{3} \times 9\right)$

$= \underline{\underline{-3}}$

習題 2B 題解 (續)

$$\begin{aligned} \text{(c)} \quad (-13) \div \left(-\frac{1}{3}\right) &= +\left(13 \div \frac{1}{3}\right) \\ &= +\left(13 \times \frac{3}{1}\right) \\ &= \underline{\underline{+39}} \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad \left(+\frac{1}{4}\right) \div \left(-\frac{1}{12}\right) &= -\left(\frac{1}{4} \div \frac{1}{12}\right) \\ &= -\left(\frac{1}{4} \times \frac{12}{1}\right) \\ &= \underline{\underline{-3}} \end{aligned}$$

$$\begin{aligned} \text{5. (a)} \quad (-12) - (-4) \times (+3) &= -12 - [-(4 \times 3)] \\ &= -12 - [-12] \\ &= -12 + 12 \\ &= \underline{\underline{0}} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad (+8) + (-12) \div (+2) &= +8 + [-(12 \div 2)] \\ &= +8 + [-6] \\ &= +8 - 6 \\ &= \underline{\underline{+2}} \end{aligned}$$

$$\begin{aligned} \text{7. (a)} \quad (-8) + (-35) \div (-7) - (+12) \\ &= -8 + [(35 \div 7)] - 12 \\ &= -8 + 5 - 12 \\ &= \underline{\underline{-15}} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad (-13) - (-4)(+3) + (-25) \\ &= -13 - [-(4 \times 3)] - 25 \\ &= -13 + 12 - 25 \\ &= \underline{\underline{-26}} \end{aligned}$$

$$\begin{aligned} \text{9. (a)} \quad (-52) \div [(+2) \times (-13)] &= (-52) \div [-(2 \times 13)] \\ &= (-52) \div [-26] \\ &= +(52 \div 26) \\ &= \underline{\underline{+2}} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad (-36) \div [(-8) - (-4)] \div \left(-\frac{3}{4}\right) \\ &= (-36) \div [-8 + 4] \div \left(-\frac{3}{4}\right) \\ &= (-36) \div [-4] \div \left(-\frac{3}{4}\right) \\ &= +(36 \div 4) \div \left(-\frac{3}{4}\right) \\ &= (+9) \div \left(-\frac{3}{4}\right) \\ &= -\left(9 \div \frac{3}{4}\right) \\ &= -\left(9 \times \frac{4}{3}\right) \\ &= \underline{\underline{-12}} \end{aligned}$$

挑戰題 (第 65 頁)

1. 哈雷彗星兩次出現相隔的年數

$$\begin{aligned} &= 1985 - (-240) \\ &= 1985 + 240 \\ &= \underline{\underline{2225}} \end{aligned}$$

3. $1 - 2 + 3 - 4 + 5 - 6 + 7 - 8 + 9 - 10$

$$\begin{aligned} &= (1 - 2) + (3 - 4) + (5 - 6) + (7 - 8) + (9 - 10) \\ &= (-1) + (-1) + (-1) + (-1) + (-1) \\ &= -1 - 1 - 1 - 1 - 1 \\ &= \underline{\underline{-5}} \end{aligned}$$



代數式

習題 3A (第 72 頁)

1. (a) $\underline{a+7}$

(b) $\underline{b-6}$

3. (a) $24 \times a = \underline{24a}$

(b) $12b \times 4 = 12 \times 4 \times b$
 $= \underline{48b}$

5. (a) $\underline{m > n}$

(b) $\underline{p^2 < 5}$

(c) $\underline{8-r=3}$

(d) $\underline{t^3 \neq 0}$

7. $\underline{\frac{x-y}{14}}$

9. $\underline{27-(c+d)}$

11. (a) $a \times b \times a \times b \times a = a \times a \times a \times b \times b$
 $= \underline{a^3 b^2}$

(b) $(3c)^2 = 3c \times 3c$
 $= 3 \times 3 \times c \times c$
 $= \underline{9c^2}$

13. (a) $a \times a \times a \div (3b)^2 = \frac{a \times a \times a}{(3b)^2}$
 $= \frac{a^3}{3b \times 3b}$
 $= \frac{a^3}{3 \times 3 \times b \times b}$
 $= \underline{\frac{a^3}{9b^2}}$

(b) $2x \times \frac{y}{4} \times \frac{y}{3} \times \frac{y}{2} = 2 \times \frac{1}{4} \times \frac{1}{3} \times \frac{1}{2} \times x \times y \times y \times y$
 $= \frac{1}{12} \times x \times y^3$
 $= \underline{\frac{xy^3}{12}}$

習題 3B (第 78 頁)

1. (a) (i) $x+2y$ 有 2 項。

(ii) $x+2y$ 的項是 x 和 $2y$ 。

(b) (i) $2x^2-5x+4$ 有 3 項。

(ii) $2x^2-5x+4$ 的項是 $2x^2$ 、 $-5x$ 和 4 。

3. (a) a 和 $3a$ 是同類項。

(b) $-x^2$ 和 $3x^2$ 是同類項。

5. $9b-5b = (9-5)b$
 $= \underline{4b}$

7. $x^2+6x^2 = (1+6)x^2$
 $= \underline{7x^2}$

9. $13pqr-8pqr = (13-8)pqr$
 $= \underline{5pqr}$

11. (a) 8 年後小新將會是 $(10+8)$ 歲，即 18 歲。

(b) a 年後小新將會是 $(10+a)$ 歲。

(c) b 年前小新是 $(10-b)$ 歲。

13. $6x-2x+4y+5y = (6-2)x + (4+5)y$
 $= \underline{4x+9y}$

15. $-2r-7+11r+9 = -2r+11r-7+9$
 $= (-2+11)r + (-7+9)$
 $= \underline{9r+2}$

17. $8x^2y-2xy^2-3x^2y = 8x^2y-3x^2y-2xy^2$
 $= (8-3)x^2y-2xy^2$
 $= \underline{5x^2y-2xy^2}$

習題 3B 題解 (續)

19. 一個電子手錶的價錢是
- $\$3x$
- 。

$$\begin{aligned}\therefore \text{家偉需付的款項} &= \$(x + 3x) \\ &= \$(1 + 3)x \\ &= \underline{\underline{\$4x}}\end{aligned}$$

21. 全程的長度 = $[2u + 3s + (13u + 4s)]$ 米
 $= [2u + 13u + 3s + 4s]$ 米
 $= [(2 + 13)u + (3 + 4)s]$ 米
 $= \underline{\underline{(15u + 7s) \text{ 米}}}$

習題 3C (第 82 頁)

1. $3a + 4$

$$\begin{array}{r} +) 4a + 5 \\ \hline 7a + 9 \\ \hline \end{array}$$

3. $6b + 8$

$$\begin{array}{r} -) 3b + 4 \\ \hline 3b + 4 \\ \hline \end{array}$$

$$\begin{aligned}5. (4a + 3b) + 5a &= 4a + 3b + 5a \\ &= 4a + 5a + 3b \\ &= (4 + 5)a + 3b \\ &= \underline{\underline{9a + 3b}}\end{aligned}$$

$$\begin{aligned}7. 8m - (5 + 5m) &= 8m - 5 - 5m \\ &= 8m - 5m - 5 \\ &= (8 - 5)m - 5 \\ &= \underline{\underline{3m - 5}}\end{aligned}$$

9. $3x^2 - 4x + 7$

$$\begin{array}{r} +) 5x^2 + 2x - 5 \\ \hline 8x^2 - 2x + 2 \\ \hline \end{array}$$

$$\begin{aligned}11. (2x^2 - 5x + 3) + (3x^2 + 8x - 6) \\ &= 2x^2 - 5x + 3 + 3x^2 + 8x - 6 \\ &= 2x^2 + 3x^2 - 5x + 8x + 3 - 6 \\ &= (2 + 3)x^2 + (-5 + 8)x + (3 - 6) \\ &= \underline{\underline{5x^2 + 3x - 3}}\end{aligned}$$

$$\begin{aligned}13. (4a + 3b) + (5a - 2b) - (3a - 7b) \\ &= 4a + 3b + 5a - 2b - 3a + 7b \\ &= 4a + 5a - 3a + 3b - 2b + 7b \\ &= (4 + 5 - 3)a + (3 - 2 + 7)b \\ &= \underline{\underline{6a + 8b}}\end{aligned}$$

$$\begin{aligned}15. (3a + 4b - 5c) + (2a - 7b - 5c) - (a - 3b - 2c) \\ &= 3a + 4b - 5c + 2a - 7b - 5c - a + 3b + 2c \\ &= 3a + 2a - a + 4b - 7b + 3b - 5c - 5c + 2c \\ &= (3 + 2 - 1)a + (4 - 7 + 3)b + (-5 - 5 + 2)c \\ &= \underline{\underline{4a - 8c}}\end{aligned}$$

17. 該三個連續奇數分別是
- n
- 、
- $n + 2$
- 和
- $n + 4$
- 。

$$\begin{aligned}\therefore \text{該三個連續奇數的和} &= n + (n + 2) + (n + 4) \\ &= n + n + 2 + n + 4 \\ &= n + n + n + 2 + 4 \\ &= (1 + 1 + 1)n + (2 + 4) \\ &= \underline{\underline{3n + 6}}\end{aligned}$$

習題 3D (第 86 頁)

$$\begin{aligned}1. (a) x \cdot x \cdot x &= x^{1+1+1} \\ &= \underline{\underline{x^3}}\end{aligned}$$

$$\begin{aligned}(b) p^2 \cdot p^3 &= p^{2+3} \\ &= \underline{\underline{p^5}}\end{aligned}$$

$$\begin{aligned}(c) (a^7)(a^4) &= a^{7+4} \\ &= \underline{\underline{a^{11}}}\end{aligned}$$

$$\begin{aligned}3. (a) x^6 \div x^3 &= x^{6-3} \\ &= \underline{\underline{x^3}}\end{aligned}$$

$$\begin{aligned}(b) x^4 \div x &= x^{4-1} \\ &= \underline{\underline{x^3}}\end{aligned}$$

$$\begin{aligned}5. (a) 15b^4 \div (-5b^2) &= \frac{15b^4}{-5b^2} \\ &= \left(\frac{15}{-5}\right)\left(\frac{b^4}{b^2}\right) \\ &= (-3)(b^{4-2}) \\ &= \underline{\underline{-3b^2}}\end{aligned}$$

習題 3D 題解 (續)

$$\begin{aligned}
 \text{(b)} \quad \frac{-49m^3}{-7m} &= \left(\frac{-49}{-7}\right)\left(\frac{m^3}{m}\right) \\
 &= 7m^{3-1} \\
 &= \underline{\underline{7m^2}}
 \end{aligned}$$

$$\begin{aligned}
 7. \text{(a)} \quad (-7x^2)(-4x^3y) &= (-7)(-4)(x^2)(x^3)(y) \\
 &= (28)(x^{2+3})(y) \\
 &= \underline{\underline{28x^5y}}
 \end{aligned}$$

$$\begin{aligned}
 \text{(b)} \quad (2a^4b^3)(3ab^4) &= (2)(3)(a^4)(a)(b^3)(b^4) \\
 &= (6)(a^{4+1})(b^{3+4}) \\
 &= \underline{\underline{6a^5b^7}}
 \end{aligned}$$

$$\begin{aligned}
 9. \text{(a)} \quad (a^3b^4) \div b^2 &= \frac{a^3b^4}{b^2} \\
 &= (a^3)\left(\frac{b^4}{b^2}\right) \\
 &= (a^3)(b^{4-2}) \\
 &= \underline{\underline{a^3b^2}}
 \end{aligned}$$

$$\begin{aligned}
 \text{(b)} \quad 4a^2b^3 \div a &= \frac{4a^2b^3}{a} \\
 &= (4)(a^{2-1})(b^3) \\
 &= \underline{\underline{4ab^3}}
 \end{aligned}$$

$$\begin{aligned}
 11. \text{(a)} \quad \frac{-16x^4y^5}{-2xy} &= \left(\frac{-16}{-2}\right)\left(\frac{x^4}{x}\right)\left(\frac{y^5}{y}\right) \\
 &= (8)(x^{4-1})(y^{5-1}) \\
 &= \underline{\underline{8x^3y^4}}
 \end{aligned}$$

$$\begin{aligned}
 \text{(b)} \quad \frac{-84m^3n^2}{7mn} &= \left(\frac{-84}{7}\right)\left(\frac{m^3}{m}\right)\left(\frac{n^2}{n}\right) \\
 &= (-12)(m^{3-1})(n^{2-1}) \\
 &= \underline{\underline{-12m^2n}}
 \end{aligned}$$

習題 3E (第 89 頁)

$$1. \text{(a)} \quad 2(a+3b) = \underline{\underline{2a+6b}}$$

$$\begin{aligned}
 \text{(b)} \quad -2(2a-7) &= (-2)(2a) - (-2)(7) \\
 &= \underline{\underline{-4a+14}}
 \end{aligned}$$

$$\begin{aligned}
 3. \text{(a)} \quad 6p(2p+3q) &= (6p)(2p) + (6p)(3q) \\
 &= \underline{\underline{12p^2+18pq}}
 \end{aligned}$$

$$\begin{aligned}
 \text{(b)} \quad -2p(3p-2q) &= (-2p)(3p) - (-2p)(2q) \\
 &= \underline{\underline{-6p^2+4pq}}
 \end{aligned}$$

$$\begin{aligned}
 5. \text{(a)} \quad 3c(a-3b+2) &= (3c)(a) - (3c)(3b) + (3c)(2) \\
 &= \underline{\underline{3ac-9bc+6c}}
 \end{aligned}$$

$$\begin{aligned}
 \text{(b)} \quad (3x-5y-4)(-2z) &= (3x)(-2z) - (5y)(-2z) - (4)(-2z) \\
 &= \underline{\underline{-6xz+10yz+8z}}
 \end{aligned}$$

$$\begin{aligned}
 7. \text{(a)} \quad (x+2)(x+3) &= (x)(x+3) + (2)(x+3) \\
 &= x^2+3x+2x+6 \\
 &= \underline{\underline{x^2+5x+6}}
 \end{aligned}$$

$$\begin{aligned}
 \text{(b)} \quad (2x+1)(x+4) &= (2x)(x+4) + (1)(x+4) \\
 &= 2x^2+8x+x+4 \\
 &= \underline{\underline{2x^2+9x+4}}
 \end{aligned}$$

$$\begin{aligned}
 9. \text{(a)} \quad (a-8)(a-9) &= (a)(a-9) - (8)(a-9) \\
 &= a^2-9a-8a+72 \\
 &= \underline{\underline{a^2-17a+72}}
 \end{aligned}$$

$$\begin{aligned}
 \text{(b)} \quad (9a-1)(3a-2) &= (9a)(3a-2) - (1)(3a-2) \\
 &= 27a^2-18a-3a+2 \\
 &= \underline{\underline{27a^2-21a+2}}
 \end{aligned}$$

11. 這間戲院的座位數目

$$\begin{aligned}
 &= 4x(2x+3y+5z) \\
 &= (4x)(2x) + (4x)(3y) + (4x)(5z) \\
 &= \underline{\underline{8x^2+12xy+20xz}}
 \end{aligned}$$

習題 3F (第 92 頁)

$$\begin{aligned}
 1. (a) \quad (5a + 5b) \div 5 &= \frac{5a + 5b}{5} \\
 &= \frac{5a}{5} + \frac{5b}{5} \\
 &= \underline{\underline{a + b}}
 \end{aligned}$$

$$\begin{aligned}
 (b) \quad (4a - 12b) \div 4 &= \frac{4a - 12b}{4} \\
 &= \frac{4a}{4} - \frac{12b}{4} \\
 &= \underline{\underline{a - 3b}}
 \end{aligned}$$

$$\begin{aligned}
 3. (a) \quad (m^2 - 6m) \div m &= \frac{m^2 - 6m}{m} \\
 &= \frac{m^2}{m} - \frac{6m}{m} \\
 &= \underline{\underline{m - 6}}
 \end{aligned}$$

$$\begin{aligned}
 (b) \quad (4m^2 + 6m) \div (-2m) &= \frac{4m^2 + 6m}{-2m} \\
 &= \frac{4m^2}{-2m} + \frac{6m}{-2m} \\
 &= \underline{\underline{-2m - 3}}
 \end{aligned}$$

$$\begin{aligned}
 5. (a) \quad (2x^2 - 6x + 18) \div 2 &= \frac{2x^2 - 6x + 18}{2} \\
 &= \frac{2x^2}{2} - \frac{6x}{2} + \frac{18}{2} \\
 &= \underline{\underline{x^2 - 3x + 9}}
 \end{aligned}$$

$$\begin{aligned}
 (b) \quad (3x^2 - 27x - 12) \div (-3) &= \frac{3x^2 - 27x - 12}{-3} \\
 &= \frac{3x^2}{-3} - \frac{27x}{-3} - \frac{12}{-3} \\
 &= \underline{\underline{-x^2 + 9x + 4}}
 \end{aligned}$$

$$\begin{aligned}
 7. (a) \quad \frac{-12n^3 + 18n^2 - 9n}{3n} &= \frac{-12n^3}{3n} + \frac{18n^2}{3n} - \frac{9n}{3n} \\
 &= \underline{\underline{-4n^2 + 6n - 3}}
 \end{aligned}$$

$$\begin{aligned}
 (b) \quad \frac{20n^3 + 15n^2 - 10n}{-5n} &= \frac{20n^3}{-5n} + \frac{15n^2}{-5n} - \frac{10n}{-5n} \\
 &= \underline{\underline{-4n^2 - 3n + 2}}
 \end{aligned}$$

$$\begin{aligned}
 9. \text{ 每斤番茄的價值} &= \$ \left(\frac{3x^2 + 6x - 15}{3} \right) \\
 &= \$ \left(\frac{3x^2}{3} + \frac{6x}{3} - \frac{15}{3} \right) \\
 &= \underline{\underline{\$(x^2 + 2x - 5)}}
 \end{aligned}$$

習題 3G (第 95 頁)

$$\begin{aligned}
 1. \quad P &= 7s \\
 &= 7(4) \\
 &= \underline{\underline{28}}
 \end{aligned}$$

$$\begin{aligned}
 3. \quad S &= 180(n - 2) \\
 &= 180(6 - 2) \\
 &= 180 \times 4 \\
 &= \underline{\underline{720}}
 \end{aligned}$$

$$\begin{aligned}
 5. \quad x &= 4(p + q) \\
 &= 4(3 + 5) \\
 &= 4 \times 8 \\
 &= \underline{\underline{32}}
 \end{aligned}$$

$$\begin{aligned}
 7. \quad x &= 5p + 12q \\
 &= 5(3) + 12(5) \\
 &= 15 + 60 \\
 &= \underline{\underline{75}}
 \end{aligned}$$

$$\begin{aligned}
 9. \quad E &= mc^2 \\
 &= (6)(2)^2 \\
 &= 6 \times 4 \\
 &= \underline{\underline{24}}
 \end{aligned}$$

$$\begin{aligned}
 11. \quad s &= \left(\frac{u + v}{2} \right) t \\
 &= \left(\frac{2 + 8}{2} \right) (5) \\
 &= \underline{\underline{25}}
 \end{aligned}$$

$$\begin{aligned}
 13. \quad y &= \frac{9bc}{a} \\
 &= \frac{9(4)(5)}{3} \\
 &= \underline{\underline{60}}
 \end{aligned}$$

習題 3G 題解 (續)

$$\begin{aligned}
 15. \quad y &= a^2 + b^2 - c^2 \\
 &= 3^2 + 4^2 - 5^2 \\
 &= 9 + 16 - 25 \\
 &= 0 \\
 &=
 \end{aligned}$$

$$\begin{aligned}
 17. \quad C &= 4\,000 + 60n \\
 &= 4\,000 + 60(45) \\
 &= 4\,000 + 2\,700 \\
 &= \underline{\underline{6\,700}}
 \end{aligned}$$

挑戰題

(第 100 頁)

$$1. \text{ 這個數的值} = \underline{\underline{100x + 10y + z}}$$

第4章 簡易方程

習題 4A (第 108 頁)

1. (a) $p - 4 = 8$
 $p - 4 + 4 = 8 + 4$
 $p = \underline{12}$

驗算：如果 $p = 12$ ，

$$\text{左方} = 12 - 4$$

$$= 8$$

$$\text{右方} = 8$$

因為左方 = 右方，所以這個解是正確的。

(b) $q - 16 = 31$
 $q - 16 + 16 = 31 + 16$
 $q = \underline{47}$

驗算：如果 $q = 47$ ，

$$\text{左方} = 47 - 16$$

$$= 31$$

$$\text{右方} = 31$$

因為左方 = 右方，所以這個解是正確的。

3. (a) $\frac{k}{9} = 9$
 $\frac{k}{9} \times 9 = 9 \times 9$
 $k = \underline{81}$

驗算：如果 $k = 81$ ，

$$\text{左方} = \frac{81}{9}$$

$$= 9$$

$$\text{右方} = 9$$

因為左方 = 右方，所以這個解是正確的。

(b) $\frac{h}{14} = \frac{4}{7}$
 $\frac{h}{14} \times 14 = \frac{4}{7} \times 14$
 $h = \underline{8}$

驗算：如果 $h = 8$ ，

$$\text{左方} = \frac{8}{14}$$

$$= \frac{4}{7}$$

$$\text{右方} = \frac{4}{7}$$

因為左方 = 右方，所以這個解是正確的。

5. (a) $\frac{q-16}{2} = 7$

$$\frac{q-16}{2} \times 2 = 7 \times 2$$

$$q - 16 = 14$$

$$q - 16 + 16 = 14 + 16$$

$$q = \underline{30}$$

驗算：如果 $q = 30$ ，

$$\text{左方} = \frac{30-16}{2}$$

$$= \frac{14}{2}$$

$$= 7$$

$$\text{右方} = 7$$

因為左方 = 右方，所以這個解是正確的。

(b) $\frac{t}{3} + 4 = 6$

$$\frac{t}{3} + 4 - 4 = 6 - 4$$

$$\frac{t}{3} = 2$$

$$\frac{t}{3} \times 3 = 2 \times 3$$

$$t = \underline{6}$$

驗算：如果 $t = 6$ ，

$$\text{左方} = \frac{6}{3} + 4$$

$$= 2 + 4$$

$$= 6$$

$$\text{右方} = 6$$

因為左方 = 右方，所以這個解是正確的。

習題 4A 題解 (續)

$$\begin{aligned}
 7. (a) \quad & 2m + 3 = 13 \\
 & 2m + 3 - 3 = 13 - 3 \\
 & 2m = 10 \\
 & \frac{2m}{2} = \frac{10}{2} \\
 & m = 5
 \end{aligned}$$

驗算：如果 $m = 5$ ，

$$\begin{aligned}
 \text{左方} &= 2 \times 5 + 3 \\
 &= 10 + 3 \\
 &= 13
 \end{aligned}$$

$$\text{右方} = 13$$

因為左方 = 右方，所以這個解是正確的。

$$\begin{aligned}
 (b) \quad & 9 + 5x = 44 \\
 & 9 + 5x - 9 = 44 - 9 \\
 & 5x = 35 \\
 & \frac{5x}{5} = \frac{35}{5} \\
 & x = 7
 \end{aligned}$$

驗算：如果 $x = 7$ ，

$$\begin{aligned}
 \text{左方} &= 9 + 5 \times 7 \\
 &= 9 + 35 \\
 &= 44
 \end{aligned}$$

$$\text{右方} = 44$$

因為左方 = 右方，所以這個解是正確的。

$$\begin{aligned}
 9. (a) \quad & \frac{2s-5}{3} = 9 \\
 & \frac{2s-5}{3} \times 3 = 9 \times 3 \\
 & 2s - 5 = 27 \\
 & 2s - 5 + 5 = 27 + 5 \\
 & 2s = 32 \\
 & \frac{2s}{2} = \frac{32}{2} \\
 & s = 16
 \end{aligned}$$

驗算：如果 $s = 16$ ，

$$\begin{aligned}
 \text{左方} &= \frac{2 \times 16 - 5}{3} \\
 &= \frac{27}{3} \\
 &= 9
 \end{aligned}$$

$$\text{右方} = 9$$

因為左方 = 右方，所以這個解是正確的。

$$\begin{aligned}
 (b) \quad & \frac{9-3h}{8} = 3 \\
 & \frac{9-3h}{8} \times 8 = 3 \times 8 \\
 & 9 - 3h = 24 \\
 & 9 - 3h - 9 = 24 - 9 \\
 & -3h = 15 \\
 & \frac{-3h}{-3} = \frac{15}{-3} \\
 & h = -5
 \end{aligned}$$

驗算：如果 $h = -5$ ，

$$\begin{aligned}
 \text{左方} &= \frac{9-3(-5)}{8} \\
 &= \frac{24}{8} \\
 &= 3
 \end{aligned}$$

$$\text{右方} = 3$$

因為左方 = 右方，所以這個解是正確的。

習題 4B (第 111 頁)

$$\begin{aligned}
 1. \quad & 3m + 10m = 26 \\
 & 13m = 26 \\
 & \frac{13m}{13} = \frac{26}{13} \\
 & m = 2
 \end{aligned}$$

$$\begin{aligned}
 3. \quad & 6u - 4 + u = 31 \\
 & 7u - 4 = 31 \\
 & 7u - 4 + 4 = 31 + 4 \\
 & 7u = 35 \\
 & \frac{7u}{7} = \frac{35}{7} \\
 & u = 5
 \end{aligned}$$

$$\begin{aligned}
 5. \quad & 3(a+2) + a = 26 \\
 & 3a + 6 + a = 26 \\
 & 4a + 6 = 26 \\
 & 4a + 6 - 6 = 26 - 6 \\
 & 4a = 20 \\
 & \frac{4a}{4} = \frac{20}{4} \\
 & a = 5
 \end{aligned}$$

習題 4B 題解 (續)

$$\begin{aligned}
 7. \quad & 4(7-3b) = -5b \\
 & 28-12b = -5b \\
 & 28-12b+12b = -5b+12b \\
 & 28 = 7b \\
 & \frac{28}{7} = \frac{7b}{7} \\
 & 4 = b \\
 & b = 4
 \end{aligned}$$

$$\begin{aligned}
 9. \quad & 3 = 0.5x + x \\
 & 3 = 1.5x \\
 & \frac{3}{1.5} = \frac{1.5x}{1.5} \\
 & 2 = x \\
 & x = 2
 \end{aligned}$$

$$\begin{aligned}
 11. \quad & 3r-4 = 2r+3 \\
 & 3r-4-2r = 2r+3-2r \\
 & r-4 = 3 \\
 & r-4+4 = 3+4 \\
 & r = 7
 \end{aligned}$$

$$\begin{aligned}
 13. \quad & 6-5s = s+18 \\
 & 6-5s-s = s+18-s \\
 & 6-6s = 18 \\
 & 6-6s-6 = 18-6 \\
 & -6s = 12 \\
 & \frac{-6s}{-6} = \frac{12}{-6} \\
 & s = -2
 \end{aligned}$$

$$\begin{aligned}
 15. \quad & 7(n-2)+3(4-n) = 10 \\
 & 7n-14+12-3n = 10 \\
 & 4n-2 = 10 \\
 & 4n-2+2 = 10+2 \\
 & 4n = 12 \\
 & \frac{4n}{4} = \frac{12}{4} \\
 & n = 3
 \end{aligned}$$

$$\begin{aligned}
 17. \quad & 4(h+3)+6-h = 36 \\
 & 4h+12+6-h = 36 \\
 & 3h+18 = 36 \\
 & 3h+18-18 = 36-18 \\
 & 3h = 18 \\
 & \frac{3h}{3} = \frac{18}{3} \\
 & h = 6
 \end{aligned}$$

$$\begin{aligned}
 19. \quad & 0.3p-0.5 = 2p-9 \\
 & 0.3p-0.5-2p = 2p-9-2p \\
 & -1.7p-0.5 = -9 \\
 & -1.7p-0.5+0.5 = -9+0.5 \\
 & -1.7p = -8.5 \\
 & \frac{-1.7p}{-1.7} = \frac{-8.5}{-1.7} \\
 & p = 5
 \end{aligned}$$

習題 4C (第 114 頁)

$$\begin{aligned}
 1. \quad & \frac{a}{12} + \frac{5}{12} = \frac{7}{12} \\
 & \frac{a+5}{12} = \frac{7}{12} \\
 & \frac{a+5}{12} \times 12 = \frac{7}{12} \times 12 \\
 & a+5 = 7 \\
 & a+5-5 = 7-5 \\
 & a = 2
 \end{aligned}$$

$$\begin{aligned}
 3. \quad & \frac{x}{6} + \frac{1}{6} = 2 \\
 & \frac{x+1}{6} = 2 \\
 & \frac{x+1}{6} \times 6 = 2 \times 6 \\
 & x+1 = 12 \\
 & x+1-1 = 12-1 \\
 & x = 11
 \end{aligned}$$

$$\begin{aligned}
 5. \quad & \frac{m}{2} + \frac{m}{7} = 9 \\
 & \left(\frac{m}{2} + \frac{m}{7}\right) \times 14 = 9 \times 14 \\
 & \frac{m}{2} \times 14 + \frac{m}{7} \times 14 = 126 \\
 & 7m + 2m = 126 \\
 & 9m = 126 \\
 & \frac{9m}{9} = \frac{126}{9} \\
 & m = 14
 \end{aligned}$$

$$\begin{aligned}
 7. \quad & \frac{3a}{4} - \frac{a}{2} = -3 \\
 & \left(\frac{3a}{4} - \frac{a}{2}\right) \times 4 = -3 \times 4 \\
 & \frac{3a}{4} \times 4 - \frac{a}{2} \times 4 = -12 \\
 & 3a - 2a = -12 \\
 & a = -12
 \end{aligned}$$



習題 4C 題解 (續)

$$9. \quad \frac{x}{4} - \frac{x+1}{8} = 2$$

$$\left(\frac{x}{4} - \frac{x+1}{8}\right) \times 8 = 2 \times 8$$

$$\frac{x}{4} \times 8 - \frac{x+1}{8} \times 8 = 16$$

$$2x - (x+1) = 16$$

$$2x - x - 1 = 16$$

$$x - 1 = 16$$

$$x - 1 + 1 = 16 + 1$$

$$x = \underline{17}$$

$$11. \quad \frac{p-3}{2} + \frac{2p}{5} = 3$$

$$\left(\frac{p-3}{2} + \frac{2p}{5}\right) \times 10 = 3 \times 10$$

$$\frac{p-3}{2} \times 10 + \frac{2p}{5} \times 10 = 30$$

$$5(p-3) + 2(2p) = 30$$

$$5p - 15 + 4p = 30$$

$$9p - 15 = 30$$

$$9p - 15 + 15 = 30 + 15$$

$$9p = 45$$

$$\frac{9p}{9} = \frac{45}{9}$$

$$p = \underline{5}$$

$$13. \quad \frac{2c-9}{6} - \frac{1}{2} = 0$$

$$\left(\frac{2c-9}{6} - \frac{1}{2}\right) \times 6 = 0 \times 6$$

$$\frac{2c-9}{6} \times 6 - \frac{1}{2} \times 6 = 0$$

$$2c - 9 - 3 = 0$$

$$2c - 12 = 0$$

$$2c - 12 + 12 = 0 + 12$$

$$2c = 12$$

$$\frac{2c}{2} = \frac{12}{2}$$

$$c = \underline{6}$$

$$15. \quad \frac{k}{7} + 4 = \frac{2k+1}{3}$$

$$\left(\frac{k}{7} + 4\right) \times 21 = \frac{2k+1}{3} \times 21$$

$$\frac{k}{7} \times 21 + 4 \times 21 = 7(2k+1)$$

$$3k + 84 = 14k + 7$$

$$3k + 84 - 14k = 14k + 7 - 14k$$

$$84 - 11k = 7$$

$$84 - 11k - 84 = 7 - 84$$

$$-11k = -77$$

$$\frac{-11k}{-11} = \frac{-77}{-11}$$

$$k = \underline{7}$$

習題 4D (第 120 頁)

$$1. \quad 89 - a = 25$$

$$89 - a - 89 = 25 - 89$$

$$-a = -64$$

$$(-a)(-1) = (-64)(-1)$$

$$a = \underline{64}$$

$$3. \quad p \times \frac{5}{6} = 75$$

$$\frac{5}{6}p = 75$$

$$\frac{5}{6}p \times 6 = 75 \times 6$$

$$5p = 450$$

$$\frac{5p}{5} = \frac{450}{5}$$

$$p = \underline{90}$$

$$5. \quad \frac{2}{3} + n = 4$$

$$\frac{2}{3} + n - \frac{2}{3} = 4 - \frac{2}{3}$$

$$n = \frac{12}{3} - \frac{2}{3}$$

$$= \frac{10}{3}$$

$$7. \quad 8x + 7x = 150$$

$$15x = 150$$

$$\frac{15x}{15} = \frac{150}{15}$$

$$x = \underline{10}$$

9. 設所求的數是 x 。

$$\frac{x+10}{6} = 8$$

$$\frac{x+10}{6} \times 6 = 8 \times 6$$

$$x + 10 = 48$$

$$x + 10 - 10 = 48 - 10$$

$$x = 38$$

$\therefore$ 所求的數是 38。

11. 設郭小姐有 x 枚伍毫硬幣，則她有 $(16-x)$ 枚壹圓硬幣。

$$x(0.5) + (16-x)(1) = 11.5$$

$$0.5x + 16 - x = 11.5$$

$$16 - 0.5x = 11.5$$

$$16 - 0.5x - 16 = 11.5 - 16$$

$$-0.5x = -4.5$$

$$\frac{-0.5x}{-0.5} = \frac{-4.5}{-0.5}$$

$$x = \underline{9}$$