

育成高中高一新生數學科暑期作業

班級： 座號： 姓名：

第 01 回：多項式運算 A

1. 請將下列數學式乘開：

(1) $-x(2x+3) =$ _____ ° (2) $(x-2)(2x+3)+5 =$ _____ °

(3) $(2x-5)^2 =$ _____ ° (4) $(x-4)(x+4) =$ _____ °

(5) $3x(8-2x) =$ _____ ° (6) $(x-3)(2-x)+6 =$ _____ °

(7) $(3x+4)^2 =$ _____ ° (8) $(3+x)(x-3) =$ _____ °

(9) $5x(3x+1) =$ _____ ° (10) $(x-3)(2x+5)-(2x-7) =$ _____ °

(11) $(3x+2)^2 =$ _____ ° (12) $(x-1)(1+x) =$ _____ °

2. 試解下列不等式：

(1) $2x+3 \leq 0 \Rightarrow$ _____ ° (2) $-3x-7 > 0 \Rightarrow$ _____ °

(3) $x-3 < 2 \Rightarrow$ _____ ° (4) $-2x+7 \geq 1 \Rightarrow$ _____ °

(5) $4x-24 > -20 \Rightarrow$ _____ ° (6) $-2x-2 \leq 3 \Rightarrow$ _____ °

(7) $4(x+5) > 20$ _____ ° (8) $-2(x-2) \leq 4 \Rightarrow$ _____ °

第 02 回：多項式運算 B

1. 請將下列數學式乘開：

(1) $-x(5x+3) =$ _____ ° (2) $(x-3)(3x+2)+6 =$ _____ °

(3) $(3x-4)^2 =$ _____ ° (4) $(x-5)(x+5) =$ _____ °

(5) $-x(7x-4) =$ _____ ° (6) $(6x-5)(x-3)-7 =$ _____ °

(7) $(3x-7)^2 =$ _____ ° (8) $(5x-7)(5x+7) =$ _____ °

(9) $-x(6x-1) =$ _____ ° (10) $(x-1)(3x+1)-4 =$ _____ °

(11) $(3x-1)^2 =$ _____ ° (12) $(x-6)(x+6) =$ _____ °

2. 試解下列不等式：

(1) $-3x+18 < 3 \Rightarrow$ _____ ° (2) $-3x+24 \geq 0 \Rightarrow$ _____ °

(3) $4x+3 > -1 \Rightarrow$ _____ ° (4) $-3x-7 \leq 2 \Rightarrow$ _____ °

(5) $7x-14 \leq 0 \Rightarrow$ _____ ° (6) $-3x+12 > 0 \Rightarrow$ _____ °

(7) $6x-(2x+8) \leq 0 \Rightarrow$ _____ ° (8) $2x+7 > 3x-4 \Rightarrow$ _____ °

第 03 回：解方程式 A

1. 解下列方程式：

(1) $3-2x=0 \Rightarrow x =$ _____ ° (2) $3x-1=0 \Rightarrow x =$ _____ °

(3) $x^2+3x-4=0 \Rightarrow x =$ _____ ° (4) $x^2+5x+6=0 \Rightarrow x =$ _____ °

(5) $2x^2-x-3=0 \Rightarrow x =$ _____ ° (6) $x^2-x-1=0 \Rightarrow x =$ _____ °

(7) $-3x+5=0 \Rightarrow x =$ _____ ° (8) $7-3x=1 \Rightarrow x =$ _____ °

(9) $x^2+x-6=0 \Rightarrow x =$ _____ ° (10) $(x-2)(x+3)-6=0 \Rightarrow x =$ _____ °

(11) $4x^2-8x+4=0 \Rightarrow x =$ _____ ° (12) $x^2+x-3=0 \Rightarrow x =$ _____ °

(13) $3-2x=5 \Rightarrow x =$ _____ ° (14) $4x+20=0 \Rightarrow x =$ _____ °

(15) $x^2+5x-6=0 \Rightarrow x =$ _____ ° (16) $x^2+6x+9=0 \Rightarrow x =$ _____ °

(17) $3x^2-2x-1=0 \Rightarrow x =$ _____ ° (18) $x^2-2x-1=0 \Rightarrow x =$ _____ °

(19) $x^2-2x+1=0 \Rightarrow x =$ _____ ° (20) $x^2-5x-14=0 \Rightarrow x =$ _____ °

第 04 回：解方程式 B

1. 解下列方程式：

(1) $3x-1=0 \Rightarrow x =$ _____ ° (2) $7x-11=0 \Rightarrow x =$ _____ °

- (3) $x^2 - 2x - 15 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ ° (4) $x^2 + 8x + 12 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ °
- (5) $5x^2 + 4x - 1 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ ° (6) $x^2 - 2x - 2 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ °
- (7) $x + 11 = 4 \Rightarrow x = \underline{\hspace{2cm}}$ ° (8) $(x-1)(2x+5) = 0 \Rightarrow x = \underline{\hspace{2cm}}$ °
- (9) $x^2 + 8x - 20 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ ° (10) $x^2 + 11x + 24 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ °
- (11) $2x^2 - 15x + 28 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ ° (12) $x^2 - 5x - 6 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ °
- (13) $1 - 3(x-1) = 0 \Rightarrow x = \underline{\hspace{2cm}}$ ° (14) $4(3x+1) + 1 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ °
- (15) $x^2 + 5x + 6 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ ° (16) $x^2 + x - 2 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ °
- (17) $6x^2 + 19x - 7 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ ° (18) $x^2 + 6x - 7 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ °
- (19) $2x^2 + 2x - 4 = 0 \Rightarrow x = \underline{\hspace{2cm}}$ ° (20) $x^2 + x = 6 \Rightarrow x = \underline{\hspace{2cm}}$ °

第 05 回：聯立與分式 A

1. 解下列聯立方程式：

- (1) $\begin{cases} x+y=5 \\ x-y=11 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ ° (2) $\begin{cases} 2x+y=5 \\ x-3y=-7 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ °
- (3) $\begin{cases} 2x+y=8 \\ x+2y=7 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ ° (4) $\begin{cases} 2x-3y=5 \\ x-2y=2 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ °
- (5) $\begin{cases} 2x+y=1 \\ x+2y=4 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ ° (6) $\begin{cases} x+2y=1 \\ -2x-5y=1 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ °
- (7) $\begin{cases} x+y=7 \\ x-y=-1 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ ° (8) $\begin{cases} 3x+y=5 \\ x-2y=4 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ °
- (9) $\begin{cases} x+y=-2 \\ x-y=18 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ ° (10) $\begin{cases} x+4y=5 \\ 2x-3y=-1 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}}$ °

2. 將下列分式通分整理：

- (1) $\frac{7}{2} - \frac{1}{3} = \underline{\hspace{2cm}}$ ° (2) $\frac{y}{x} - \frac{x}{y} = \underline{\hspace{2cm}}$ °
- (3) $\frac{5}{3} - \frac{3}{5} = \underline{\hspace{2cm}}$ ° (4) $\frac{3}{x} + \frac{y}{4} = \underline{\hspace{2cm}}$ °

$$(5) 7 - \frac{5}{4} = \underline{\hspace{2cm}} \circ$$

$$(6) \frac{x}{y} - \frac{2}{x} = \underline{\hspace{2cm}} \circ$$

$$(7) \frac{4}{3} - \frac{1}{5} = \underline{\hspace{2cm}} \circ$$

$$(8) \frac{y}{x} + \frac{x}{y} = \underline{\hspace{2cm}} \circ$$

$$(9) \frac{3}{5} - \frac{7}{15} = \underline{\hspace{2cm}} \circ$$

$$(10) \frac{3y}{x} + \frac{2x}{y} = \underline{\hspace{2cm}} \circ$$

第 06 回：聯立與分式 B

1. 解下列聯立方程式：

$$(1) \begin{cases} x+y=3 \\ x-y=13 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

$$(2) \begin{cases} 2x+y=6 \\ x-3y=-3 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

$$(3) \begin{cases} 2x+y=18 \\ x+2y=-7 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

$$(4) \begin{cases} 2x-3y=4 \\ -x+2y=3 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

$$(5) \begin{cases} 2x+y=-2 \\ x+2y=5 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

$$(6) \begin{cases} x+2y=-2 \\ -2x-5y=2 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

$$(7) \begin{cases} x+y=-5 \\ x-y=3 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

$$(8) \begin{cases} 3x+y=-5 \\ x-2y=-1 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

$$(9) \begin{cases} x+y=22 \\ x-y=-8 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

$$(10) \begin{cases} x+4y=15 \\ 2x-3y=1 \end{cases} \Rightarrow (x, y) = \underline{\hspace{2cm}} \circ$$

2. 將下列分式通分整理：

$$(1) \frac{5}{2} - \frac{2}{3} = \underline{\hspace{2cm}} \circ$$

$$(2) \frac{y}{x} - \frac{2x}{y} = \underline{\hspace{2cm}} \circ$$

$$(3) \frac{5}{7} - \frac{7}{5} = \underline{\hspace{2cm}} \circ$$

$$(4) \frac{2}{x} - \frac{y}{3} = \underline{\hspace{2cm}} \circ$$

$$(5) -6 + \frac{5}{3} = \underline{\hspace{2cm}} \circ$$

$$(6) \frac{2x}{y} + \frac{2}{x} = \underline{\hspace{2cm}} \circ$$

$$(7) \frac{7}{5} - \frac{3}{8} = \underline{\hspace{2cm}} \circ$$

$$(8) \frac{y}{x} - \frac{x}{y} = \underline{\hspace{2cm}} \circ$$

$$(9) \frac{4}{5} - \frac{7}{25} = \underline{\hspace{2cm}} \circ$$

$$(10) \frac{-2y}{x} + \frac{x}{y} = \underline{\hspace{2cm}} \circ$$

第 07 回：根式運算 A

1. 化簡下列根號：

(1) $\sqrt{18} =$ _____ ° (2) $\sqrt[3]{16} =$ _____ ° (3) $\sqrt[4]{64} =$ _____ °

(4) $\sqrt{8} =$ _____ ° (5) $\sqrt[3]{16} =$ _____ ° (6) $\sqrt[4]{16} =$ _____ °

(7) $(2-\sqrt{3})(1+2\sqrt{3}) =$ _____ ° (8) $\sqrt{8} + \sqrt[3]{24} + \sqrt{18} - \sqrt[3]{54} =$ _____ °

(9) $(\sqrt{6} + \sqrt{3})(\sqrt{6} - \sqrt{3}) =$ _____ ° (10) $2\sqrt{3} - \sqrt[3]{24} + \sqrt{12} =$ _____ °

2. 有理化下列分式：

(1) $\frac{2}{\sqrt{5}} =$ _____ ° (2) $\frac{2}{\sqrt[3]{3}} =$ _____ ° (3) $\frac{3}{\sqrt[4]{8}} =$ _____ °

(4) $\frac{\sqrt{2}}{\sqrt{8}} =$ _____ ° (5) $\frac{2}{\sqrt[3]{16}} =$ _____ ° (6) $\frac{\sqrt[3]{27}}{\sqrt[4]{81}} =$ _____ °

(7) $\frac{2}{\sqrt{3}-1} =$ _____ ° (8) $\frac{\sqrt{3}}{\sqrt{5}+\sqrt{2}} =$ _____ °

(9) $\frac{1}{\sqrt{5}+\sqrt{3}} =$ _____ ° (10) $\frac{\sqrt{3}}{\sqrt{2}-1} =$ _____ °

第 08 回：根式運算 B

1. 化簡下列根號：

(1) $\sqrt{20} =$ _____ ° (2) $\sqrt[3]{27} =$ _____ ° (3) $\sqrt[4]{16} =$ _____ °

(4) $\sqrt{12} =$ _____ ° (5) $\sqrt[3]{32} =$ _____ ° (6) $\sqrt[4]{243} =$ _____ °

(7) $(\sqrt{13}-\sqrt{2})(\sqrt{13}+\sqrt{2}) =$ _____ ° (8) $2\sqrt{3} + 3\sqrt[3]{2} + 5\sqrt{3} + \sqrt[3]{16} =$ _____ °

(9) $\sqrt{3} + \sqrt[3]{54} - \sqrt{27} + \sqrt[3]{16} =$ _____ ° (10) $(3-\sqrt{18})(3+\sqrt{18}) =$ _____ °

2. 有理化下列分式：

(1) $\sqrt{\frac{5}{2}} =$ _____ ° (2) $\frac{\sqrt{6}}{\sqrt[3]{8}} =$ _____ ° (3) $\frac{1}{\sqrt[3]{2000}} =$ _____ °

$$(4) \frac{5}{\sqrt{3}} = \underline{\hspace{2cm}} \circ \quad (5) \frac{2}{\sqrt[3]{9}} = \underline{\hspace{2cm}} \circ \quad (6) \frac{3}{\sqrt[4]{32}} = \underline{\hspace{2cm}} \circ$$

$$(7) \frac{\sqrt{6} + \sqrt{2}}{\sqrt{6} - \sqrt{2}} = \underline{\hspace{2cm}} \circ \quad (8) \frac{\sqrt{2}}{2 + \sqrt{3}} = \underline{\hspace{2cm}} \circ$$

$$(9) \frac{1}{\sqrt{2} + \sqrt{3}} = \underline{\hspace{2cm}} \circ \quad (10) \frac{\sqrt{2}}{\sqrt{3} - \sqrt{5}} = \underline{\hspace{2cm}} \circ$$

第 09 回：配方法 A

1. 將下列函數完成配方法：

$$(1) x^2 - 4x + 1 = \underline{\hspace{2cm}} \circ \quad (2) -3x^2 - 6x + 1 = \underline{\hspace{2cm}} \circ$$

$$(3) x^2 - x + 1 = \underline{\hspace{2cm}} \circ \quad (4) 2x^2 - x + 1 = \underline{\hspace{2cm}} \circ$$

$$(5) x^2 + 4x - 1 = \underline{\hspace{2cm}} \circ \quad (6) 2x^2 + 4x - 1 = \underline{\hspace{2cm}} \circ$$

$$(7) -2x^2 + 2x + 2 = \underline{\hspace{2cm}} \circ \quad (8) 3x^2 - 2x + 1 = \underline{\hspace{2cm}} \circ$$

$$(9) x^2 + 4x + 1 = \underline{\hspace{2cm}} \circ \quad (10) -x^2 - 6x + 1 = \underline{\hspace{2cm}} \circ$$

第 10 回：配方法 B

1. 將下列函數完成配方法：

$$(1) x^2 - x + 1 = \underline{\hspace{2cm}} \circ \quad (2) 2x^2 - x + 1 = \underline{\hspace{2cm}} \circ$$

$$(3) x^2 - 6x + 5 = \underline{\hspace{2cm}} \circ \quad (4) -2x^2 - 4x + 7 = \underline{\hspace{2cm}} \circ$$

$$(5) x^2 + x + 5 = \underline{\hspace{2cm}} \circ \quad (6) 2x^2 - 3x + 6 = \underline{\hspace{2cm}} \circ$$

$$(7) x^2 - 6x + 3 = \underline{\hspace{2cm}} \circ \quad (8) -3x^2 + 18x + 7 = \underline{\hspace{2cm}} \circ$$

$$(9) x^2 - 3x - 7 = \underline{\hspace{2cm}} \circ \quad (10) 5x^2 - 3x - 1 = \underline{\hspace{2cm}} \circ$$

第 11 回：總驗收 A

1. 將下列數學式乘開：

$$(1) 5x(3x+1) = \underline{\hspace{2cm}} \circ \quad (2) (x-3)(2x+5) - (2x-7) = \underline{\hspace{2cm}} \circ$$

(3) $(3x+2)^2 =$ _____ ° (4) $(x-1)(1+x) =$ _____ °

2. 試解下列不等式：

(1) $4x-24 > -20 \Rightarrow$ _____ ° (2) $-2x-2 \leq 3 \Rightarrow$ _____ °

3. 解下列方程式：

(1) $3-2x=5 \Rightarrow x =$ _____ ° (2) $4x+20=0 \Rightarrow x =$ _____ °

(3) $x^2+5x-6=0 \Rightarrow x =$ _____ ° (4) $x^2+6x+9=0 \Rightarrow x =$ _____ °

(5) $3x^2-2x-1=0 \Rightarrow x =$ _____ ° (6) $x^2-2x-1=0 \Rightarrow x =$ _____ °

4. 解下列聯立方程式：

(1) $\begin{cases} 2x+y=1 \\ x+2y=4 \end{cases} \Rightarrow (x,y) =$ _____ ° (2) $\begin{cases} x+2y=1 \\ -2x-5y=1 \end{cases} \Rightarrow (x,y) =$ _____ °

5. 將下列分式通分整理：

(1) $7 - \frac{5}{4} =$ _____ ° (2) $\frac{x}{y} - \frac{2}{x} =$ _____ °

6. 化簡下列根式：

(1) $\sqrt{20} =$ _____ ° (2) $\sqrt[3]{27} =$ _____ ° (3) $\sqrt[4]{16} =$ _____ °

(4) $(\sqrt{13}-\sqrt{2})(\sqrt{13}+\sqrt{2}) =$ _____ ° (5)

$2\sqrt{3}+3\sqrt[3]{2}+5\sqrt{3}+\sqrt[3]{16} =$ _____ °

7. 有理化下列分式：

(1) $\sqrt{\frac{5}{2}} =$ _____ ° (2) $\frac{\sqrt{6}}{\sqrt[3]{8}} =$ _____ ° (3) $\frac{1}{\sqrt[3]{2000}} =$ _____ °

(4) $\frac{\sqrt{6}+\sqrt{2}}{\sqrt{6}-\sqrt{2}} =$ _____ ° (5) $\frac{\sqrt{2}}{2+\sqrt{3}} =$ _____ °

8. 將下列函數完成配方法：

(1) $x^2-4x+1 =$ _____ ° (2) $-3x^2-6x+1 =$ _____ °

(3) $x^2-x+1 =$ _____ ° (4) $2x^2-x+1 =$ _____ ° 育

第 12 回：總驗收 B

1. 將下列數學式乘開：

(1) $-x(5x+3) =$ _____ ° (2) $(x-3)(3x+2)+6 =$ _____ °

(3) $(3x-4)^2 =$ _____ ° (4) $(x-5)(x+5) =$ _____ °

2. 解下列方程式：

(1) $-3x+18 < 3 \Rightarrow$ _____ ° (2) $-3x+24 \geq 0 \Rightarrow$ _____ °

3. 解下列方程式：

(1) $3x-1=0 \Rightarrow x =$ _____ ° (2) $7x-11=0 \Rightarrow x =$ _____ °

(3) $x^2-2x-15=0 \Rightarrow x =$ _____ ° (4) $x^2+8x+12=0 \Rightarrow x =$ _____ °

(5) $5x^2+4x-1=0 \Rightarrow x =$ _____ ° (6) $x^2-2x-2=0 \Rightarrow x =$ _____ °

4. 解下列聯立方程式：

(1) $\begin{cases} x+y=7 \\ x-y=-1 \end{cases} \Rightarrow (x, y) =$ _____ ° (2) $\begin{cases} 3x+y=5 \\ x-2y=4 \end{cases} \Rightarrow (x, y) =$ _____ °

5. 將下列分式通分整理：

(1) $\frac{4}{3} - \frac{1}{5} =$ _____ ° (2) $\frac{y}{x} + \frac{x}{y} =$ _____ °

6. 化簡下列根式：

(1) $\sqrt{12} =$ _____ ° (2) $\sqrt[3]{32} =$ _____ ° (3) $\sqrt[4]{243} =$ _____ °

(9) $\sqrt{3} + \sqrt[3]{54} - \sqrt{27} + \sqrt[3]{16} =$ _____ ° (10) $(3-\sqrt{18})(3+\sqrt{18}) =$ _____ °

7. 有理化下列分式：

(4) $\frac{5}{\sqrt{3}} =$ _____ ° (5) $\frac{2}{\sqrt[3]{9}} =$ _____ ° (6) $\frac{3}{\sqrt[4]{32}} =$ _____ °

(7) $\frac{1}{\sqrt{2}+\sqrt{3}} =$ _____ ° (8) $\frac{\sqrt{2}}{\sqrt{3}-\sqrt{5}} =$ _____ °

8. 將下列函數完成配方法：

(1) $x^2 - 6x + 5 =$ _____ ° (2) $-2x^2 - 4x + 7 =$ _____ °

(3) $x^2 + x + 5 =$ _____ ° (4) $2x^2 - 3x + 6 =$ _____ °

育成高中高一新生數學科暑期作業答案

第 01 回：多項式運算 A 答案

1.請將下列數學式乘開：

- (1) $-2x^2 - 3x$ (2) $2x^2 - x - 1$ (3) $4x^2 - 20x + 25$ (4) $x^2 - 16$ (5) $-6x^2 + 24x$
(6) $-x^2 + 5x$ (7) $9x^2 + 24x + 16$ (8) $x^2 - 9$ (9) $15x^2 + 5x$ (10) $2x^2 - 3x - 8$
(11) $9x^2 + 12x + 4$ (12) $x^2 - 1$

2.試解下列不等式：

- (1) $x \leq -\frac{3}{2}$ (2) $x < -\frac{7}{3}$ (3) $x < 5$ (4) $x \leq 3$
(5) $x > 1$ (6) $x \geq -\frac{5}{2}$ (7) $x > 0$ (8) $x \geq 0$

第 02 回：多項式運算 B 答案

1.請將下列數學式乘開：

- (1) $-5x^2 - 3x$ (2) $3x^2 - 7x$ (3) $9x^2 - 24x + 16$ (4) $x^2 - 25$ (5) $-7x^2 + 4x$
(6) $6x^2 - 23x + 8$ (7) $9x^2 - 42x + 49$ (8) $25x^2 - 49$ (9) $-6x^2 + x$ (10) $3x^2 - 2x - 5$
(11) $9x^2 - 6x + 1$ (12) $x^2 - 36$

2.試解下列不等式：

- (1) $x > 5$ (2) $x \leq 8$ (3) $x > -1$ (4) $x \geq -3$ (5) $x \leq 2$ (6) $x < 4$ (7) $x \leq 2$, (8)
 $x < 11$

第 03 回：解方程式 A 答案

1. 解下列方程式：

- (1) $x = \frac{3}{2}$ (2) $x = \frac{1}{3}$ (3) $x = -4, 1$ (4) $x = -2, -3$ (5) $x = -1, \frac{3}{2}$ (6) $x = \frac{1 \pm \sqrt{5}}{2}$
(7) $x = \frac{5}{3}$ (8) $x = 2$ (9) $x = -3, 2$ (10) $x = -4, 3$ (11) $x = 1$ (12) $x = \frac{-1 \pm \sqrt{13}}{2}$ 。
(13) $x = -1$ (14) $x = -5$ (15) $x = -6, 1$ (16) $x = -3$ (17) $x = 1, -\frac{1}{3}$ (18) $x = 1 \pm \sqrt{2}$ 。
(19) $x = 1$ (20) $x = 7, -2$

第 04 回：解方程式 B 答案

1. 解下列方程式：

(1) $x = \frac{1}{3}$ (2) $x = \frac{11}{7}$ (3) $x = 5, -3$ (4) $x = -6, -2$ (5) $x = \frac{1}{5}, -1$ (6) $x = 1 \pm \sqrt{3}$

(7) $x = -7$ (8) $x = 1, -\frac{5}{2}$ (9) $x = -10, 2$ (10) $x = -8, -3$ (11) $x = 4, \frac{7}{2}$

(12) $x = 6, -1$ (13) $x = \frac{4}{3}$ (14) $x = -\frac{5}{12}$ (15) $x = -3, -2$ (16) $x = -2, 1$

(17) $x = \frac{1}{3}, -\frac{7}{2}$ (18) $x = -7, 1$ (19) $x = 1, -2$ (20) $x = -3, 2$

第 05 回：聯立與分式 A 答案

1. 解下列聯立方程式：

(1) $(8, -3)$ (2) $(\frac{8}{7}, \frac{19}{7})$ (3) $(3, 2)$ (4) $(4, 1)$ (5) $(-\frac{2}{3}, \frac{7}{3})$ (6) $(7, -3)$

(7) $(3, 4)$ (8) $(2, -1)$ (9) $(8, -10)$ (10) $(1, 1)$

2. 將下列分式通分整理：

(1) $\frac{19}{6}$ (2) $\frac{y^2 - x^2}{xy}$ (3) $\frac{16}{15}$ (4) $\frac{12 + xy}{4x}$ (5) $\frac{23}{4}$ (6) $\frac{x^2 - 2y}{xy}$

(7) $\frac{17}{15}$ (8) $\frac{y^2 + x^2}{xy}$ (9) $\frac{2}{15}$ (10) $\frac{3y^2 + 2x^2}{xy}$

第 06 回：聯立與分式 B 答案

1. 解下列聯立方程式：

(1) $(8, -5)$ (2) $(\frac{15}{7}, \frac{12}{7})$ (3) $(\frac{43}{3}, -\frac{32}{3})$ (4) $(17, 10)$ (5) $(-3, 4)$ (6) $(-6, 2)$

(7) $(-1, -4)$ (8) $(-\frac{11}{7}, -\frac{2}{7})$ (9) $(7, 15)$ (10) $(\frac{49}{11}, \frac{29}{11})$

2. 將下列分式通分整理：

(1) $\frac{11}{6}$ (2) $\frac{y^2 - 2x^2}{xy}$ (3) $\frac{-24}{35}$ (4) $\frac{6 - xy}{3x}$ (5) $\frac{-13}{3}$ (6) $\frac{2x^2 + 2y}{xy}$

$$(7) \frac{41}{40} \quad (8) \frac{y^2 - x^2}{xy} \quad (9) \frac{13}{25} \quad (10) \frac{-2y^2 + x^2}{xy}$$

第 07 回：根式運算 A 答案

1. 化簡下列根號：

$$(1) 3\sqrt{2} \quad (2) 2\sqrt[3]{2} \quad (3) 2\sqrt{2} \quad (4) 2\sqrt{2} \quad (5) 2\sqrt[3]{2} \quad (6) 2 \\ (7) -4 + 3\sqrt{3} \quad (8) 5\sqrt{2} - 3\sqrt[3]{2} + 2\sqrt[3]{3} \quad (9) 3 \quad (10) 4\sqrt{3} - 2\sqrt[3]{3}$$

2. 有理化下列分式：

$$(1) \frac{2\sqrt{5}}{5} \quad (2) \frac{2\sqrt[3]{9}}{3} \quad (3) \frac{3\sqrt[4]{2}}{2} \quad (4) \frac{1}{2} \quad (5) \frac{\sqrt[3]{4}}{2} \quad (6) 1 \quad (7) \sqrt{3} + 1 \\ (8) \frac{\sqrt{15} - \sqrt{6}}{3} \quad (9) \frac{\sqrt{5} - \sqrt{3}}{2} \quad (10) \sqrt{6} + \sqrt{3}$$

第 08 回：根式運算 B 答案

1. 化簡下列根號：

$$(1) 2\sqrt{5} \quad (2) 3 \quad (3) 2 \quad (4) 2\sqrt{3} \quad (5) 2\sqrt[3]{4} \cdot \quad (6) 3\sqrt[4]{3} \quad (7) 11 \quad (8) 7\sqrt{3} + 5\sqrt[3]{2} \cdot \\ (9) -2\sqrt{3} + 5\sqrt[3]{2} \quad (10) -9$$

2. 有理化下列分式：

$$(1) \frac{\sqrt{10}}{2} \quad (2) \frac{\sqrt{6}}{2} \quad (3) \frac{\sqrt[3]{4}}{20} \quad (4) \frac{5\sqrt{3}}{3} \quad (5) \frac{2\sqrt[3]{3}}{3} \quad (6) \frac{3\sqrt[4]{8}}{4} \\ (7) 2 + \sqrt{3} \quad (8) 2\sqrt{2} - \sqrt{6} \quad (9) \sqrt{3} - \sqrt{2} \quad (10) -\frac{\sqrt{6} + \sqrt{10}}{2}$$

第 09 回：配方法 A 答案

1. 將下列函數完成配方法：

$$(1) (x-2)^2 - 3 \quad (2) -3(x+1)^2 + 4 \quad (3) (x - \frac{1}{2})^2 + \frac{3}{4} \quad (4) 2(x - \frac{1}{4})^2 + \frac{7}{8} \\ (5) (x+2)^2 - 5 \quad (6) 2(x+1)^2 - 3 \quad (7) -2(x - \frac{1}{2})^2 + \frac{5}{2} \quad (8) 3(x - \frac{1}{3})^2 + \frac{2}{3} \\ (9) (x+2)^2 - 3 \quad (10) -(x+3)^2 + 10$$

第 10 回：配方法 B 答案

1. 將下列函數完成配方法：

(1) $(x - \frac{1}{2})^2 + \frac{3}{4}$ (2) $2(x - \frac{1}{4})^2 + \frac{7}{8}$ (3) $(x - 3)^2 - 4$ (4) $-2(x + 1)^2 + 9$

(5) $(x + \frac{1}{2})^2 + \frac{19}{4}$ (6) $2(x - \frac{3}{4})^2 + \frac{39}{8}$ (7) $(x - 3)^2 - 6$ (8) $-3(x - 3)^2 + 34$

(9) $(x - \frac{3}{2})^2 - \frac{37}{4}$ (10) $5(x - \frac{3}{10})^2 - \frac{29}{20}$

第 11 回：總驗收 A 答案

1. 將下列數學式乘開：

(1) $15x^2 + 5x$ (2) $2x^2 - 3x - 8$ (3) $9x^2 + 12x + 4$ (4) $x^2 - 1$

2. 試解下列不等式：

(1) $x > 1$ (2) $x \geq -\frac{5}{2}$

3. 解下列方程式：

(1) $x = -1$ (2) $x = -5$ (3) $x = -6\sqrt{1}$

(4) $x = -3$ (重根) (5) $x = -\frac{1}{3}\sqrt{1}$ (6) $x = 1 \pm \sqrt{2}$

4. 解下列聯立方程式：

(1) $(x, y) = (-\frac{2}{3}, \frac{7}{3})$ (2) $(x, y) = (7, -3)$

5. 將下列分式通分整理：

(1) $\frac{23}{4}$ (2) $\frac{x^2 - 2y}{xy}$

6. 化簡下列根式：

(1) $2\sqrt{5}$ (2) 3 (3) 2 (4) 11 (5) $5\sqrt[3]{2} + 7\sqrt{3}$

7. 有理化下列分式：

(1) $\frac{\sqrt{10}}{2}$ (2) $\frac{\sqrt{6}}{2}$ (3) $\frac{\sqrt[3]{4}}{20}$ (4) $2 + \sqrt{3}$ (5) $2\sqrt{2} - \sqrt{6}$

8. 將下列函數完成配方法：

(1) $(x - 2)^2 - 3$ (2) $-3(x + 1)^2 + 4$ (3) $(x - \frac{1}{2})^2 + \frac{3}{4}$ (4) $2(x - \frac{1}{4})^2 + \frac{7}{8}$

第 12 回：總驗收 B 答案

1.將下列數學式乘開：

(1) $-5x^2 - 3x$ (2) $3x^2 - 7x$ (3) $9x^2 - 24x + 16$ (4) $x^2 - 25$

2.解下列方程式：

(1) $x > 5$ (2) $x \leq 8$

3.解下列方程式：

(1) $x = \frac{1}{3}$ (2) $x = \frac{11}{7}$ (3) $x = -3\sqrt{5}$

(4) $x = -6\sqrt{-2}$ (5) $x = -1\sqrt{\frac{1}{5}}$ (6) $x = 1 \pm \sqrt{3}$

4.解下列聯立方程式：

(1) $(x, y) = (3, 4)$ (2) $(x, y) = (2, -1)$

5.將下列分式通分整理：

(1) $\frac{17}{15}$ (2) $\frac{y^2 + x^2}{xy}$

6.化簡下列根式：

(1) $2\sqrt{3}$ (2) $2\sqrt[3]{4}$ (3) $3\sqrt[4]{3}$ (4) $-2\sqrt{3} + 5\sqrt[3]{2}$ (5) -9

7.有理化下列分式：

(1) $\frac{5\sqrt{3}}{3}$ (2) $\frac{2}{3}\sqrt[3]{3}$ (3) $\frac{3}{4}\sqrt[4]{8}$ (4) $\sqrt{3} - \sqrt{2}$ (5) $\frac{-\sqrt{10} - \sqrt{6}}{2}$

8.將下列函數完成配方法：

(1) $(x-3)^2 - 4$ (2) $-2(x+1)^2 + 9$ (3) $(x + \frac{1}{2})^2 + \frac{19}{4}$ (4) $2(x - \frac{3}{4})^2 + \frac{39}{8}$