

1. (1) $\frac{-1}{x^2}$ (2) $\frac{-4}{x^2}$ (3) $\frac{3 \text{ 次式}}{x^3}$ (4) $\frac{\text{同類項}}{x^2}$ (例) $\frac{1}{3}x^4$ (2) $2m$ (3) $A = x+2$ $B = -x+3$ (両方で $\times 3$)

3. (1) $\frac{-3x}{x^2}$ (2) $\frac{5x^2+3x}{x^2}$ (3) $\frac{3x^2-9x+4}{x^3}$ (4) $\frac{-15x+35}{x^3}$

(5) $\frac{-2x-6y+3}{x^3}$ (6) $\frac{15x-6y}{x^3}$ (7) $\frac{8x+3y}{x^3}$ (8) $\frac{-2x-2y}{x^3}$

(9) $\frac{6x^2y^3}{x^3}$ (10) $\frac{10xy}{x^3}$ (11) $\frac{18xy}{x^3}$ (12) $-\frac{3}{2}x^2y$

(13) $\frac{7x+y}{6}$ (14) $\frac{4x-26y}{15}$

4. (1) $\frac{67}{x^3}$ (2) $-\frac{31}{6}$

5. (1) $x = \frac{6+2y}{3}$ (2) $n = \frac{3V}{S}$ (3) $b = \frac{2S-aR}{R}$ ($b = \frac{2S}{R} - a$)

6. n は整数とすると、差が5で連続する3つの整数は $n, n+5, n+10$ と表される

⑤ $n + (n+5) + (n+10) = 3n + 15$
 $= 3(n+5)$ ②

$n+5$ は整数だから、 $3(n+5)$ は3の倍数である。
 したがって、差が5で連続する3つの整数の和は3の倍数である。①

(別解) 差が5で連続する3つの整数の中央の数を n とすると
 他の2つは、 $n-5, n+5$ と表される ②

$(n-5) + n + (n+5) = 3n$ ②

n は整数だから、 $3n$ は3の倍数である。
 したがって、差が5で連続する3つの整数の和は3の倍数である。①

7. 2けたの自然数 A の十の位の数を a 、一の位の数を b とすると

⑤ $A = 10a+b$, $B = 10b+a$ と表される ②

$A + 8B = (10a+b) + 8(10b+a)$
 $= 10a+b+80b+8a$
 $= 18a+81b = 9(2a+9b)$ ②

$2a+9b$ は整数だから、 $9(2a+9b)$ は9の倍数である。
 したがって、 A に B の8倍を加えた数は9の倍数である。①

8. ① $\frac{6m+5}{x^1}$ ② $\frac{6n+3}{x^1}$ ③ $\frac{6m+6n+8}{x^1}$

④ $\frac{m+n+1}{x^2}$ ⑤ $\frac{2}{x^2}$ ⑥ $\frac{6}{x^1}$

9. (1) $\frac{4a^2h}{x^3} \text{ cm}^3$ (2) $\frac{12}{x^3}$ 倍

10. $\frac{180\pi}{x^3} \text{ cm}^2$

$$(1) \frac{-3n^2 + 4n - 5}{n-2}$$

$$(2) \textcircled{1} \frac{1}{n-2} \quad \textcircled{2} \frac{3}{n-2} \quad \textcircled{3} \frac{3}{n-2} \quad \textcircled{4} \frac{1}{n-2}$$

$$\textcircled{1} \frac{1}{n-2} \quad \textcircled{2} \frac{7n-9n-6n}{n-2}$$

$$(4) \textcircled{1} \frac{2n}{2n+2} \quad \textcircled{2} \frac{2n+1}{2n-1} \quad \textcircled{3} \frac{7n+5}{7n-2}$$

$$2. (1) \frac{7n+4}{n-2} \quad (2) \frac{11n+5}{n-2} \quad (3) \frac{12n+4}{n-2} \quad (4) \frac{9n-2}{n-2}$$

$$(1) \frac{-2n+3}{n-2} \quad (2) \frac{3n+2}{n-2} \quad (3) \frac{1}{n-2} \quad (4) \frac{4n+5}{n-2}$$

$$3. (1) \textcircled{1} \frac{3}{n-3} \quad \textcircled{2} \frac{5}{n-3}$$

$$(2) \textcircled{1} \frac{2}{n-3} \quad \textcircled{2} \frac{5n+5}{n-3}$$

$$4. (1) \frac{1}{n-2} \quad \frac{2}{n-2} \quad \frac{4}{n-2}$$

$$\textcircled{1} \frac{2n}{n-2} \quad \textcircled{2} \frac{3}{n-2} \quad \textcircled{3} \frac{15n^2}{n-2} \quad \textcircled{4} \frac{9}{n-2}$$

$$(3) \frac{4}{n-3} \quad \textcircled{4} \frac{3}{n-3}$$

$$(5) \textcircled{1} \frac{5}{n-3} \quad \textcircled{2} \frac{7}{n-3} \quad \textcircled{3} \frac{5n+5}{n-3} \quad \textcircled{4} \frac{7}{n-3}$$

$$4. (6) \textcircled{1} \textcircled{2} \textcircled{3} \textcircled{4} \textcircled{5} \textcircled{6} \textcircled{7} \textcircled{8} \textcircled{9} \textcircled{10} \textcircled{11} \textcircled{12} \textcircled{13} \textcircled{14} \textcircled{15} \textcircled{16} \textcircled{17} \textcircled{18} \textcircled{19} \textcircled{20} \textcircled{21} \textcircled{22} \textcircled{23} \textcircled{24} \textcircled{25} \textcircled{26} \textcircled{27} \textcircled{28} \textcircled{29} \textcircled{30} \textcircled{31} \textcircled{32} \textcircled{33} \textcircled{34} \textcircled{35} \textcircled{36} \textcircled{37} \textcircled{38} \textcircled{39} \textcircled{40} \textcircled{41} \textcircled{42} \textcircled{43} \textcircled{44} \textcircled{45} \textcircled{46} \textcircled{47} \textcircled{48} \textcircled{49} \textcircled{50} \textcircled{51} \textcircled{52} \textcircled{53} \textcircled{54} \textcircled{55} \textcircled{56} \textcircled{57} \textcircled{58} \textcircled{59} \textcircled{60} \textcircled{61} \textcircled{62} \textcircled{63} \textcircled{64} \textcircled{65} \textcircled{66} \textcircled{67} \textcircled{68} \textcircled{69} \textcircled{70} \textcircled{71} \textcircled{72} \textcircled{73} \textcircled{74} \textcircled{75} \textcircled{76} \textcircled{77} \textcircled{78} \textcircled{79} \textcircled{80} \textcircled{81} \textcircled{82} \textcircled{83} \textcircled{84} \textcircled{85} \textcircled{86} \textcircled{87} \textcircled{88} \textcircled{89} \textcircled{90} \textcircled{91} \textcircled{92} \textcircled{93} \textcircled{94} \textcircled{95} \textcircled{96} \textcircled{97} \textcircled{98} \textcircled{99} \textcircled{100}$$

$$n, n+1, n+2 \text{ と表される。} \textcircled{2}$$

$$n + (n+1) + (n+2) = 3n+3$$

$$= 3(n+1) \textcircled{2}$$

$$n+1 \text{ は整数 } n+1 \text{ である。連続する3つの整数の和は3の倍数である。} \textcircled{2}$$

$$(6) \textcircled{1} \textcircled{2} \textcircled{3} \textcircled{4} \textcircled{5} \textcircled{6} \textcircled{7} \textcircled{8} \textcircled{9} \textcircled{10} \textcircled{11} \textcircled{12} \textcircled{13} \textcircled{14} \textcircled{15} \textcircled{16} \textcircled{17} \textcircled{18} \textcircled{19} \textcircled{20} \textcircled{21} \textcircled{22} \textcircled{23} \textcircled{24} \textcircled{25} \textcircled{26} \textcircled{27} \textcircled{28} \textcircled{29} \textcircled{30} \textcircled{31} \textcircled{32} \textcircled{33} \textcircled{34} \textcircled{35} \textcircled{36} \textcircled{37} \textcircled{38} \textcircled{39} \textcircled{40} \textcircled{41} \textcircled{42} \textcircled{43} \textcircled{44} \textcircled{45} \textcircled{46} \textcircled{47} \textcircled{48} \textcircled{49} \textcircled{50} \textcircled{51} \textcircled{52} \textcircled{53} \textcircled{54} \textcircled{55} \textcircled{56} \textcircled{57} \textcircled{58} \textcircled{59} \textcircled{60} \textcircled{61} \textcircled{62} \textcircled{63} \textcircled{64} \textcircled{65} \textcircled{66} \textcircled{67} \textcircled{68} \textcircled{69} \textcircled{70} \textcircled{71} \textcircled{72} \textcircled{73} \textcircled{74} \textcircled{75} \textcircled{76} \textcircled{77} \textcircled{78} \textcircled{79} \textcircled{80} \textcircled{81} \textcircled{82} \textcircled{83} \textcircled{84} \textcircled{85} \textcircled{86} \textcircled{87} \textcircled{88} \textcircled{89} \textcircled{90} \textcircled{91} \textcircled{92} \textcircled{93} \textcircled{94} \textcircled{95} \textcircled{96} \textcircled{97} \textcircled{98} \textcircled{99} \textcircled{100}$$

$$n-1, n, n+1 \text{ と表される。} \textcircled{2}$$

$$(n-1) + n + (n+1) = 3n \textcircled{2}$$

$$n \text{ は整数 } n \text{ である。3n は3の倍数である。}$$

$$\therefore \text{連続する3つの整数の和は3の倍数である。} \textcircled{2}$$

$$5. (1) \frac{1}{n-2}$$

$$(2) \textcircled{1} \begin{array}{|c|c|c|c|c|} \hline x & 1 & 2 & 3 & 4 \\ \hline y & 3 & 2 & 1 & 0 \\ \hline \end{array}$$

$$\textcircled{2} \begin{array}{|c|c|c|c|c|} \hline x & 1 & 2 & 3 & 4 \\ \hline y & 7 & 4 & 1 & -2 \\ \hline \end{array}$$

$$\textcircled{3} \begin{cases} x = 3 \\ y = 1 \end{cases}$$

$$(3) \frac{1}{n-2}$$

$$6. (1) \begin{cases} x = 3 \\ y = 2 \end{cases} \quad (2) \begin{cases} x = -2 \\ y = 6 \end{cases}$$

$$(3) \begin{cases} x = -10 \\ y = -7 \end{cases} \quad (4) \begin{cases} x = -6 \\ y = 2 \end{cases}$$