＜ 1ページ. 検算1 ＞

問1の解答

(1) $\frac{1}{2} = 0.5$ ， $\frac{1}{3} = 0.33$ ， $\frac{5}{6} = 0.83$ ， $\frac{2}{5} = 0.4$

(2) $\frac{3}{4} = 0.75$ ， $\frac{5}{6} = 0.83$ ， $\frac{8}{10} = 0.8$ ， $\frac{19}{12} = 1.58$

(3) $\frac{2}{3} = 0.66$ (又は 0.67) ， $\frac{1}{2} = 0.5$ ， $\frac{1}{1} = 1$ ， $\frac{1}{6} = 0.17$ (又は 0.16)

(4) $\frac{11}{12} = 0.92$ (又は 0.91) ， $\frac{5}{8} = 0.63$ (又は 0.62) ， $\frac{7}{24} = 0.29$ ， $\frac{6}{4} = 1.5$

問2の解答

(1) $\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$

(2) $\frac{3}{4} + \frac{5}{6} = \frac{19}{12}$

(3) $\frac{2}{3} - \frac{1}{2} = \frac{4-3}{6} = \frac{1}{6}$

(4) $\frac{11}{12} - \frac{5}{8} = \frac{22-15}{24} = \frac{7}{24}$

(5) $\frac{5}{4} + \frac{7}{6} = \frac{15+14}{12} = \frac{29}{12}$

(6) $\frac{7}{8} + \frac{11}{6} = \frac{21+44}{24} = \frac{65}{24}$

(7) $\frac{7}{5} - \frac{3}{10} = \frac{14-3}{10} = \frac{11}{10}$

(8) $\frac{13}{8} - \frac{7}{6} = \frac{39-28}{24} = \frac{11}{24}$

(9) $\frac{1.2}{2} + \frac{3.2}{3} = \frac{3.6+6.4}{6} = \frac{10}{6} = \frac{5}{3}$

(10) $\frac{5}{4} + \frac{4.5}{6} = \frac{15+9}{12} = \frac{24}{12} = 2$

(11) $\frac{9.3}{8} - \frac{3.4}{4} = \frac{9.3-6.8}{8} = \frac{2.5}{8} = \frac{25}{80} = \frac{5}{16}$

(12) $\frac{7.6}{8} - \frac{3.7}{6} = \frac{22.8-14.8}{24} = \frac{8}{24} = \frac{1}{3}$

＜ 2ページ. 検算2 ＞

問1の解答

(1) $0.2 \times 1.3 = \dfrac{2}{10} \times \dfrac{13}{10} = \dfrac{26}{100} = 0.26$

(2) $0.4 \times 0.15 = \dfrac{4}{10} \times \dfrac{15}{100} = \dfrac{60}{1000} = \dfrac{6}{100} = 0.06$

(3) $0.03 \times 1.04 = \dfrac{3}{100} \times \dfrac{104}{100} = \dfrac{312}{10000} = 0.0312$

問2の解答

(1) $\dfrac{6}{5} \div \dfrac{3}{4} = \dfrac{6 \times 4}{5 \times 3} = \dfrac{8}{5}$　　検算 $\dfrac{8}{5} \times \dfrac{3}{4} = \dfrac{6}{5}$

(2) $\dfrac{5}{12} \div \dfrac{8}{3} = \dfrac{5 \times 3}{12 \times 8} = \dfrac{5}{32}$　　検算 $\dfrac{5}{32} \times \dfrac{8}{3} = \dfrac{5}{12}$

(3) $\dfrac{\frac{1}{8}}{\frac{3}{5}} = \dfrac{\frac{1}{8} \times 5 \times 8}{\frac{3}{5} \times 5 \times 8} = \dfrac{5}{3 \times 8} = \dfrac{5}{24}$　　検算 $\dfrac{5}{24} \times \dfrac{3}{5} = \dfrac{1}{8}$

(4) $\dfrac{\frac{3}{10}}{\frac{7}{12}} = \dfrac{\frac{3}{10} \times 120}{\frac{7}{12} \times 120} = \dfrac{3 \times 12}{70} = \dfrac{18}{35}$　　検算 $\dfrac{18}{35} \times \dfrac{7}{12} = \dfrac{3}{10}$

＜ 3ページ. 数の大小 ＞

解答　(1)　$\dfrac{1}{7} < \dfrac{1}{2} - \dfrac{1}{3} < 0.2$

(2)　$\dfrac{3}{2} + \dfrac{1}{3} < \dfrac{17}{9} < 1.9$

(3)　$-\dfrac{3}{4} - \dfrac{2}{5} < -1.13 < -\dfrac{9}{8}$

(4)　$\dfrac{1}{3} < 0.34 < \dfrac{3}{4} - \dfrac{2}{5}$

(5)　$-\dfrac{1}{6} - \dfrac{3}{4} < -\dfrac{8}{9} < -\dfrac{7}{8}$

(6)　$\dfrac{5}{6} + \dfrac{3}{2} < \dfrac{25}{8} - \dfrac{3}{4} < \dfrac{12}{5}$

＜ 4ページ. 割合 ＞

問1の解答

(1) $\dfrac{73}{100} = 7$割3分$= 73\%$

(2) $0.425 = 4$割2分5厘$= 42.5\%$

問2の解答

(1) $5 : 6 \quad = \dfrac{5}{6}$

(2) $12 : 18 \quad = \dfrac{12}{18} = \dfrac{2}{3}$

(3) $18 : 45 \quad = \dfrac{18}{45} = \dfrac{2}{5}$

(4) $1.5 : 2.5 \quad = \dfrac{1.5}{2.5} = \dfrac{3}{5}$

(5) $0.72 : 1.44 \quad = \dfrac{0.72}{1.44} = \dfrac{1}{2}$

＜ 5ページ. 比と比例配分 ＞

問1の解答

DEの長さをxとすると

$$5:3=2:x \quad \Rightarrow \quad \frac{5}{3}=\frac{2}{x} \quad \Rightarrow \quad x=2\times\frac{3}{5}=\frac{6}{5}=1.2$$

(答) DE= 1.2 (cm)

問2の解答

$$\mathrm{DE}=\frac{16}{7}\ \ (\mathrm{cm}) \qquad \mathrm{AE}=\frac{20}{7}\ \ (\mathrm{cm})$$

問3の解答

$$6\times\frac{5}{3+5}=\frac{30}{8}=\frac{15}{4}=3+\frac{3}{4}=3.75\ \ (\text{万円})=37500\ \ (\text{円})$$

＜ 6ページ. 累乗 ＞

問1の解答

(1) $10 \times 10 \times 10 \quad = 10^3$

(2) $7 \times 7 \times 7 \times 7 \times 7 \quad = 7^5$

(3) $(-2) \times (-2) \times (-2) \times 3 \times 3 \times 3 \times 3 \quad = (-2)^3 \times 3^4$

問2の解答

(1) $(-1)^2 = 1$

(2) $(-1)^3 = -1$

(3) $(-1)^4 = 1$

(4) $(-1)^5 = -1$

(5) $-2^4 = -16$

(6) $(-2)^4 = 16$

(7) $-5^2 = -25$

(8) $(-3) \times 4^2 = -48$

(9) $(-3^4) \times (-10)^3 = -81 \times (-1000) = 81000$

(10) $(-2)^3 \times (-5^2) = -8 \times (-25) = 200$

(11) $(3^2)^3 = 9^3 = 729$

(12) $(2^2)^3 \div (-4)^2 = 4^3 \div (-4)^2 = 4^3 \div 4^2 = 4$

＜ 7ページ. 素因数分解 ＞

問1の解答

(1) $1,\ 2,\ 3,\ 6,\ 9,\ 18$

(2) $1,\ 2,\ 3,\ 4,\ 6,\ 8,\ 12,\ 24$

問2の解答

23, 29, 31, 37, 41, 43, 47

問3の解答

(1) $2^2 \times 17$　　(2) $2^2 \times 3^3$　　(3) $2^2 \times 5 \times 7$

(4) $2^4 \times 3^2$　　(5) $2^2 \times 3 \times 13$　　(6) $2^2 \times 7^2$

(7) $3^2 \times 5^2$　　(8) $2^2 \times 3^4$

＜ 8ページ. アルファベット ＞

解答

(1) b , f , 6　　(2) $\mathscr{h}$, $\mathscr{n}$　　(3) $\mathscr{l}$, 1 , 7

(4) $\mathscr{g}$, 9　　(5) s , 5　　(6) u , $\mathscr{v}$

(7) x , $\times$　　(8) z , 2　　(9) c , C

(10) s , S　　(11) U , V　　(12) X , $\times$

(13) 2 , 3　　(14) 5 , 6　　(15) e , $\mathscr{l}$

＜ 9ページ. ギリシャ文字 ＞

解答

(1) α , d　　(2) $\varkappa$, r　　(3) ρ , p

(4) τ , t　　(5) χ , x　　(6) ω , w

＜ 10ページ. 数としての文字 ＞

問1の解答

$y = 5 \quad , \quad z = 10 \quad , \quad w = 2$

問2の解答

(1) $x = 5$, $y = 6$, $z = 1$, $w = 2$

(2) $x = 7$, $y = 6$, $z = 8$, $w = 1$

問3の解答

$x = 12$, $y = 9$, $z = 4$

＜ 11ページ. 省略記号の変更 ＞

問1の解答

(1) $\dfrac{5}{4}$　　(2) $\dfrac{13}{5}$　　(3) $\dfrac{14}{3}$　　(4) $\dfrac{49}{5}$

問2の解答

(1) $5 \times x + x + x + x$

$= 5x + 3x = 8x$

(2) $2 \times x \times x \times 3 \times y \times y \times y$

$= 6x^2y^3$

(3) $a \times a \times (a + 4 \times b)$

$= a^2(a + 4b)$

$(= a^3 + 4a^2b)$

(4) $3 \times x \times x \times (x \times 4 - y \times y)$

$= 3x^2(4x - y^2)$

$(= 12x^3 - 3x^2y^2)$

＜ 12ページ. 文字式のきまり ＞

解答　(1)　$3 \times a \times b \times x \times a \times x \times x \times 2$

$= 6a^2bx^3$

(2)　$2(x-y) - 3(y+2x) + x(2+y)$

$= 2x - 2y - 3y - 6x + 2x + xy$

$= -2x - 5y + xy$

(3)　$8 \times x \times y \times x \div (4 \times x \times y \times 3 \times y)$

$= \dfrac{8x^2y}{12xy^2} = \dfrac{2x}{3y}$

(4)　$36a^3b^2 \div 45ab^4$

$= \dfrac{36a^3b^2}{45ab^4} = \dfrac{4a^2}{5b^2}$

(5)　$(4x^2y) \times (3x^2y^5) \div (6x^3y)$

$= \dfrac{12x^4y^6}{6x^3y} = 2xy^5$

(6)　$(5a^3bc) \div (4abc^2) \times (8a^2b^3c)$

$= \dfrac{5a^3bc \times 8a^2b^3c}{4abc^2} = 10a^4b^3$

＜ 13ページ. 通分 ＞

解答

(1) $\dfrac{7}{6}-\dfrac{3}{4}=\dfrac{14-9}{12}=\dfrac{5}{12}$

(2) $\dfrac{5}{12}+\dfrac{7}{8}=\dfrac{10+21}{24}=\dfrac{31}{24}$

(3) $\dfrac{11}{8}-\dfrac{13}{12}=\dfrac{33-26}{24}=\dfrac{7}{24}$

(4) $\dfrac{x}{3}+\dfrac{y}{6}=\dfrac{2x+y}{6}$

(5) $\dfrac{a}{6}-\dfrac{b}{4}=\dfrac{2a-3b}{12}$

(6) $\dfrac{x}{9}+\dfrac{y}{12}=\dfrac{4x+3y}{36}$

(7) $\dfrac{6}{a}-\dfrac{y}{x}=\dfrac{6x-ay}{ax}$

(8) $\dfrac{b}{a}+\dfrac{d}{c}=\dfrac{bc+ad}{ac}$

(9) $\dfrac{1}{x}+\dfrac{1}{y}+\dfrac{1}{z}=\dfrac{yz+xz+xy}{xyz}$

＜ 14ページ. 分数の簡略化 ＞

解答

(1) $\dfrac{1}{\frac{4}{5}} = \dfrac{5}{4}$

(2) $\dfrac{\frac{7}{4}}{\frac{3}{5}} = \dfrac{\frac{7}{4} \times 5 \times 4}{\frac{3}{5} \times 5 \times 4} = \dfrac{35}{12}$

(3) $\dfrac{\frac{2}{3} + \frac{1}{2}}{\frac{2}{3} - \frac{1}{2}} = \dfrac{\frac{4+3}{6}}{\frac{4-3}{6}} = 7$

(4) $\dfrac{1}{\frac{1}{2} + \frac{1}{3} + \frac{1}{5}} = \dfrac{1}{\frac{15+10+6}{30}} = \dfrac{30}{31}$

(5) $\dfrac{\frac{d}{c}}{\frac{b}{a}} = \dfrac{ad}{bc}$

(6) $\dfrac{1}{\frac{zw}{xy}} = \dfrac{xy}{zw}$

(7) $\dfrac{1}{\frac{y}{x} + \frac{w}{z}} = \dfrac{1}{\frac{yz+xw}{xz}} = \dfrac{xz}{yz+xw}$

(8) $\dfrac{\frac{1}{ac}}{\frac{b}{a} - \frac{d}{c}} = \dfrac{\frac{1}{ac}}{\frac{bc-ad}{ac}} = \dfrac{1}{bc-ad}$

(9) $\dfrac{1}{\frac{1}{a} + \frac{1}{b} + \frac{1}{c}} = \dfrac{1}{\frac{bc+ac+ab}{abc}} = \dfrac{abc}{bc+ac+ab}$

＜ 15ページ. 文字式の値 ＞

問1の解答

(1) $-2x = -2 \times (-2) = 4$

(2) $3+4x = 3+4(-2) = 3-8 = -5$

(3) $\dfrac{6}{x} = \dfrac{6}{-2} = -3$

(4) $x^2 - 5x + 3 = 4 + 10 + 3 = 17$

問2の解答

(1) $5a - 6b = -20 - 12 = -32$

(2) $\dfrac{b^2}{a} = \dfrac{4}{-4} = -1$

(3) $5a^2b + b^4 = 5 \times 16 \times 2 + 16 = 160 + 16 = 176$

(4) $a^b = (-4)^2 = 16$

問3の解答

$R = \dfrac{\frac{a-b}{ab}}{\frac{a+b}{ab}} = \dfrac{a-b}{a+b}$ より

(1) $R = \dfrac{3-2}{3+2} = \dfrac{1}{5}$

(2) $R = \dfrac{4-2}{4+2} = \dfrac{2}{6} = \dfrac{1}{3}$

(3) $R = \dfrac{5-3}{5+2} = \dfrac{2}{8} = \dfrac{1}{4}$

＜ 16ページ. 等式の変形1 ＞

問1の解答

(1) $x = -3$　　(2) $x = 2$　　(3) $x = \dfrac{7}{9}$

問2の解答

(1) $x = \dfrac{3}{4}$　　(2) $x = -\dfrac{1}{5}$　　(3) $x = \dfrac{21}{4}$　　(4) $x = \dfrac{1}{5}$

＜ 17ページ. 等式の変形２ ＞

解答

(1) $W = A\sigma$

(2) $I = \dfrac{E}{R}$

(3) $r = \dfrac{\ell}{2\pi}$

(4) $a = \dfrac{2S}{b}$

(5) $N = \dfrac{1000V}{\pi D}$

(6) $T = \dfrac{9.74 \times 10^5 P}{N}$

(7) $Z = \dfrac{D}{m}$

(8) $t = \dfrac{v - a}{b}$

(9) $t = \dfrac{\sigma}{\alpha E} + \tau$

(10) $\mu = \dfrac{E}{2G} - 1$

(11) $a = \dfrac{2S}{h} - b$

(12) $R = \dfrac{abc}{bc + ac + ab}$

＜ 20ページ. 単位の計算1 ＞

問1の解答

(1) 0.231　　(2) 1.5　　(3) 10^7

問2の解答

(1) $2.4 + 1.76 = 4.16\ (m)$　　(2) $3000 - 620 = 2380\ (m)$

問3の解答

(1) 144　　(2) 1.6　　(3) 3600

(4) 1.8　　(5) 162　　(6) 5400

＜ 21ページ. 単位の計算2 ＞

問1の解答

(1) 10000　　(2) 1000000

(3) 430　　(4) 50000

問2の解答

(1) 1000　　(2) 1000000

(3) 1000000000　　(4) 35000

＜ 22ページ. 単位の計算3 ＞

問1の解答

$$72\ \mathrm{km/h} = \boxed{1200}\ \mathrm{m/min} = \boxed{20}\ \mathrm{m/s}$$

問2の解答

$$\frac{100\ \mathrm{m}}{10\ \mathrm{s}} = \frac{600\ \mathrm{m}}{60\ \mathrm{s}} = \frac{600\ \mathrm{m}}{1\ \mathrm{min}} = \frac{3600\ \mathrm{m}}{60\ \mathrm{min}} = \frac{36\ \mathrm{km}}{1\ \mathrm{h}}$$

(答) 36km/h

問3の解答

$$\frac{42\,\mathrm{km}}{\left(2+\frac{20}{60}\right)\ \mathrm{h}} = \frac{42000\,\mathrm{m}}{(120+20)\,\mathrm{min}} = \frac{4200\,\mathrm{m}}{14\,\mathrm{min}} = \frac{300\,\mathrm{m}}{1\,\mathrm{min}} = \frac{300\,\mathrm{m}}{60\,\mathrm{s}} = \frac{100\,\mathrm{m}}{20\,\mathrm{s}}$$

(答) 100m を 20秒で走る

＜ 23ページ. 面積計算 ＞

問1の解答

$$(1)\ \ S=\frac{1}{2}ah \qquad\qquad (2)\ \ S=\frac{1}{2}(a+b)h$$

問2の解答

$$\begin{aligned}
&20-\left(2+\frac{3}{2}+\frac{1}{2}+\frac{3}{2}+6\right)\\
&=20-\left(8+3+\frac{1}{2}\right)\\
&=20-\left(11+\frac{1}{2}\right)\\
&=9-\frac{1}{2}=\frac{17}{2}\ (\mathrm{cm}^2)
\end{aligned}$$

＜ 24ページ. 文字式の展開1 ＞

問1の解答

(1)　$S=(a+b)^2=a^2+2ab+b^2$

(2)　$S=(a+b+c)^2=a^2+b^2+c^2+2ab+2ac+2bc$

問2の解答

$S=a^2-b^2$

$\quad=(a+b)(a-b)$

＜ 25 ページ. 文字式の展開 2 ＞

解答 (1) $(a-b)^2 = a^2 - 2ab + b^2$

(2) $(a+b)(a+c) = a^2+ab+ac+bc \ \left(= a^2+a(b+c)+bc\right)$

(3) $(a+b)(a-c) = a^2 + ab - ac - bc$

(4) $(a-b)(a-c) = a^2 - ab - ac + bc$

(5) $(a+b)(-a+b) = -a^2 - ab + ab + b^2 = -a^2 + b^2$

(6) $(a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ac$

(7) $(a+b-c)^2 = a^2 + b^2 + c^2 + 2ab - 2bc - 2ac$

(8) $(a-b-c)^2 = a^2 + b^2 + c^2 - 2ab + 2bc - 2ac$

＜ 26 ページ. 文字式の展開 3 ＞

解答 (1) $(a+b)(a^2-ab+b^2)=a^3+b^3$

(2) $(a-b)^3=a^3-3a^2b+3ab^2-b^3$

(3) $(a-b)(a+b)^2=(a^2-b^2)(a+b)=a^3+a^2b-ab^2-b^3$

(4) $(a^2-b^2)(a^2+b^2)=a^4-b^4$

(5) $(a-b)^2(a+b)^2=(a^2-b^2)^2=a^4-2a^2b^2+b^4$

＜ 27ページ. ピタゴラスの定理1 ＞

解答 (1) $4 \times \dfrac{1}{2}ab = 2ab$

(2) $2ab$

(3) $c^2 = a^2 + b^2$

＜ 28 ページ. ピタゴラスの定理 2 ＞

解答 (1) $b^2 = 26^2 - 24^2 = 100$

$\underline{b = 10}$

(2) $c^2 = 7^2 + 24^2 = 625 = (25)^2$

$\underline{c = 25}$

(3) $a^2 = 41^2 - 9^2 = 1600 = 40^2$

$\underline{a = 40}$

＜ 29ページ. 平方根1 ＞

問1の解答

(1) 7　　(2) 12　　(3) $\frac{5}{8}$　　(4) 0.1

問2の解答

OD$=\sqrt{4}=2$

OE$=\sqrt{5}$

OF$=\sqrt{6}$

OG$=\sqrt{7}$

＜ 30ページ. 平方根2 ＞

問1の解答

(1) $-\sqrt{2}-\sqrt{3}$　　(2) $9\sqrt{2}-5\sqrt{3}$

(3) $8\sqrt{3}+3\sqrt{5}$　　(4) $-4\sqrt{3}+9\sqrt{5}$

問2の解答

(1) 13　　(2) 4　　(3) $\frac{2}{5}$　　(4) 0.3

問3の解答

(1) $\sqrt{6}$　　(2) $\sqrt{30}$　　(3) $\sqrt{70}$　　(4) 4

＜ 31ページ. 平方根3 ＞

問1の解答

(1) $2\sqrt{5}$　　(2) $2\sqrt{6}$　　(3) $5\sqrt{2}$　　(4) $6\sqrt{2}$　　(5) $7\sqrt{2}$

問2の解答

(1) $\sqrt{3} \times \sqrt{12} = \sqrt{36} = 6$

(2) $\sqrt{6} \times \sqrt{24} = \sqrt{6} \times 2\sqrt{6} = 2 \times 6 = 12$

(3) $\sqrt{27} \times \sqrt{12} = 3\sqrt{3} \times 2\sqrt{3} = 6 \times 3 = 18$

問3の解答

(1) $\dfrac{\sqrt{54}}{\sqrt{6}} = \sqrt{\dfrac{54}{6}} = \sqrt{9} = 3$

(2) $\dfrac{\sqrt{128}}{\sqrt{16}} = \sqrt{\dfrac{128}{16}} = \sqrt{8} = 2\sqrt{2}$

(3) $\dfrac{\sqrt{2} \times \sqrt{12}}{\sqrt{3}} = \sqrt{\dfrac{2 \times 12}{3}} = \sqrt{8} = 2\sqrt{2}$

＜ 32ページ. 平方根４ ＞

問１の解答

(1) $(\sqrt{2}+\sqrt{3})^2 = 2+2\sqrt{6}+3 = 5+2\sqrt{6}$

(2) $(\sqrt{3}+\sqrt{6})^2 = 3+2\sqrt{18}+6 = 9+6\sqrt{2}$

(3) $(\sqrt{5}-\sqrt{3})^2 = 5-2\sqrt{15}+3 = 8-2\sqrt{15}$

(4) $(\sqrt{6}-\sqrt{2})^2 = 6-2\sqrt{12}+2 = 8-4\sqrt{3}$

(5) $(\sqrt{5}+\sqrt{3})(\sqrt{5}-\sqrt{3}) = 5-3 = 2$

(6) $(3+\sqrt{2})(3-\sqrt{2}) = 9-2 = 7$

問２の解答

(1) $\dfrac{\sqrt{3}}{\sqrt{2}} = \dfrac{\sqrt{6}}{2}$　　(2) $\dfrac{2}{\sqrt{3}} = \dfrac{2\sqrt{3}}{3}$　　(3) $\dfrac{2}{\sqrt{2}} = \sqrt{2}$

(4) $\dfrac{6}{\sqrt{12}} = \dfrac{6\sqrt{12}}{12} = \dfrac{2\sqrt{3}}{2} = \sqrt{3}$　　(5) $\dfrac{3}{\sqrt{24}} = \dfrac{3\sqrt{24}}{24} = \dfrac{2\sqrt{6}}{8} = \dfrac{\sqrt{6}}{4}$

問３の解答

(1) $\dfrac{2}{\sqrt{3}+\sqrt{2}} = \dfrac{2(\sqrt{3}-\sqrt{2})}{3-2} = 2\sqrt{3}-2\sqrt{2}$

(2) $\dfrac{1}{\sqrt{5}-\sqrt{3}} = \dfrac{\sqrt{5}+\sqrt{3}}{5-3} = \dfrac{\sqrt{5}+\sqrt{3}}{2}$

(3) $\dfrac{4}{\sqrt{7}+\sqrt{3}} = \dfrac{4(\sqrt{7}-\sqrt{3})}{7-3} = \sqrt{7}-\sqrt{3}$

(4) $\dfrac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}} = \dfrac{(\sqrt{5}-\sqrt{3})^2}{5-3} = \dfrac{1}{2}(5-2\sqrt{15}+3) = 4-\sqrt{15}$

＜ 33ページ. 数の表示1 ＞

問1の解答

$$
\begin{aligned}
&a \times 10^3 + b \times 10^2 + c \times 10 + d \\
&= 1000a + 100b + 10c + d
\end{aligned}
$$

問2の解答

$$
\begin{aligned}
&a \times 10^2 + b \times 10 + c + d \times \frac{1}{10} + e \times \left(\frac{1}{10}\right)^2 \\
&= 100a + 10b + c + \frac{d}{10} + \frac{e}{100}
\end{aligned}
$$

＜ 34ページ. 数の表示２ ＞

問１の解答

① $(13)_{10}$　② $(42)_{10}$　③ $(83)_{10}$　④ $(326)_{10}$　⑤ $(1120)_{10}$

問２の解答

① $(25)_8$　② $(55)_8$　③ $(117)_8$　④ $(234)_8$

問３の解答

① $3+\dfrac{1}{10}+\dfrac{8}{10^2}$　② $1+\dfrac{5}{8}$　③ $2+\dfrac{7}{8}+\dfrac{6}{8^2}$

＜ 36 ページ. 整式 2 ＞

解答　(1)　$2x^2+3x+5$　　(2)　$5x^2+10x-10$

(3)　x^2+x-12　　(4)　$10x^2+16x-42$

＜ 37ページ. 整式3 ＞

問1の解答

(1) x^2+4x+4

(2) $x^2-8x+16$

(3) $x^2+3x+\dfrac{9}{4}$

(4) $x^2-5x+\dfrac{25}{4}$

(5) $x^2+\dfrac{5}{3}x+\dfrac{25}{36}$

(6) $x^2-\dfrac{3}{2}x+\dfrac{9}{16}$

(7) x^2-a^2

(8) $x^2+(a+b)x+ab$

(9) $x^2-(a+b)x+ab$

(10) $x^2+\dfrac{b}{a}x+\dfrac{b^2}{4a^2}$

問2の解答

(1) $(x-2)^2$

(2) $(x+5)^2$

(3) $\left(x-\dfrac{3}{2}\right)^2$

(4) $\left(x+\dfrac{7}{2}\right)^2$

(5) $\left(x-\dfrac{1}{4}\right)^2$

(6) $\left(x+\dfrac{b}{2a}\right)^2$

＜ 38ページ.2次方程式1 ＞

解答　(1)　$\underline{x = \pm 3}$　　(2)　$\underline{x = \pm 2\sqrt{3}}$

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

(5)　$x = 2 \pm 3$　　(6)　$x - 3 \pm 2$

$\underline{x = 5 \text{ または } -1}$　　$\underline{x = -1 \text{ または } -5}$

＜ 40ページ.2次方程式3 ＞

解答

$$
\begin{aligned}
x^2+\frac{b}{a}x &= -\frac{c}{a} \\
&\Downarrow \\
x^2+2\times\frac{b}{2a}x+\left(\frac{b}{2a}\right)^2 &= \left(\frac{b}{2a}\right)^2-\frac{c}{a} \\
&\Downarrow \\
\left(x+\frac{b}{2a}\right)^2 &= \frac{b^2-4ac}{4a^2} \\
&\Downarrow \\
x+\frac{b}{2a} &= \pm\sqrt{\frac{b^2-4ac}{4a^2}} \\
&\Downarrow \\
x &= -\frac{b}{2a}\pm\frac{\sqrt{b^2-4ac}}{\sqrt{4a^2}} \\
&\Downarrow
\end{aligned}
$$

$$
\underline{(\text{答})\quad x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}}
$$