

入試対策プリント（計算等基本問題） 21日目 解答と解説

解答 (1) 11 (2) $\frac{11}{15}x$ (3) $\sqrt{15}$ (4) $x = \frac{1 \pm \sqrt{13}}{2}$ (5) $(x-1)(x-9)$

$$\begin{aligned}(1) \quad & 3 - 4 \times (-2) \\ &= 3 + 8 \\ &= 11\end{aligned}$$

$$\begin{aligned}(2) \quad & \frac{2}{3}(2x-3) - \frac{1}{5}(3x-10) \\ &= \frac{4}{3}x - 2 - \frac{3}{5}x + 2 \\ &= \frac{20}{15}x - \frac{9}{15}x - 2 + 2 \\ &= \frac{11}{15}x\end{aligned}$$

$$\begin{aligned}(3) \quad & (\sqrt{10} + \sqrt{5})(\sqrt{6} - \sqrt{3}) \\ &= \sqrt{60} - \sqrt{30} + \sqrt{30} - \sqrt{15} \\ &= 2\sqrt{15} - \sqrt{15} \\ &= \sqrt{15}\end{aligned}$$

$$\begin{aligned}(4) \quad & 2x^2 + 5x + 3 = x^2 + 6x + 6 \\ & 2x^2 - x^2 + 5x - 6x + 3 - 6 = 0 \\ & x^2 - x - 3 = 0 \\ & x = \frac{1 \pm \sqrt{(-1)^2 - 4 \times 1 \times (-3)}}{2} \\ & x = \frac{1 \pm \sqrt{13}}{2}\end{aligned}$$

$$\begin{aligned}(5) \quad & 5x(x-2) - (2x+3)(2x-3) \\ &= 5x^2 - 10x - (4x^2 - 9) \\ &= 5x^2 - 10x - 4x^2 + 9 \\ &= x^2 - 10x + 9 \\ &= (x-1)(x-9)\end{aligned}$$

入試対策プリント（計算等基本問題） 22日目 解答と解説

【解答】 (1) -63 (2) $\frac{1}{20}x$ (3) $-a+25b$ (4) $7-2\sqrt{10}$ (5) $(x-6)(x+6)$
(6) $x = \frac{-5 \pm \sqrt{29}}{2}$

$$\begin{aligned}(1) \quad & (-9) \times 7 \\ & = -(9 \times 7) \\ & = -63\end{aligned}$$

$$\begin{aligned}(2) \quad & \frac{4}{5}x - \frac{3}{4}x \\ & = \frac{16}{20}x - \frac{15}{20}x \\ & = \frac{1}{20}x\end{aligned}$$

$$\begin{aligned}(3) \quad & 7(a-b) - 4(2a-8b) \\ & = 7a - 7b - 8a + 32b \\ & = -a + 25b\end{aligned}$$

$$\begin{aligned}(4) \quad & (\sqrt{5} - \sqrt{2})^2 \\ & = (\sqrt{5})^2 - 2 \times \sqrt{5} \times \sqrt{2} + (\sqrt{2})^2 \\ & = 5 - 2\sqrt{10} + 2 \\ & = 7 - 2\sqrt{10}\end{aligned}$$

$$\begin{aligned}(5) \quad & x^2 - 36 \\ & = (x-6)(x+6)\end{aligned}$$

$$\begin{aligned}(6) \quad & x^2 + 5x - 1 = 0 \\ & x = \frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times (-1)}}{2} \\ & x = \frac{-5 \pm \sqrt{29}}{2}\end{aligned}$$

入試対策プリント（計算等基本問題） 23日目 解答と解説

解答 (1) $\frac{23}{20}a$ (2) $x=2, y=1$ (3) $2\sqrt{3}-3\sqrt{2}$ (4) $x=3, 4$ (5) $-12x^3y$

$$\begin{aligned}(1) \quad & \frac{7}{4}a - \frac{3}{5}a \\ &= \frac{35}{20}a - \frac{12}{20}a \\ &= \frac{23}{20}a\end{aligned}$$

$$\begin{aligned}(2) \quad & \begin{cases} 2x - 3y = 1 \\ 3x + 2y = 8 \end{cases} \\ & \begin{array}{r} 4x - 6y = 2 \\ + \quad 9x + 6y = 24 \\ \hline 13x = 26 \\ x = 2 \\ 2 \times 2 - 3y = 1 \\ -3y = -3 \\ y = 1 \end{array}\end{aligned}$$

$$\begin{aligned}(3) \quad & \sqrt{3}(2 - \sqrt{6}) \\ &= 2\sqrt{3} - \sqrt{18} \\ &= 2\sqrt{3} - 3\sqrt{2}\end{aligned}$$

$$\begin{aligned}(4) \quad & x^2 - 7x + 12 = 0 \\ & (x-3)(x-4) = 0 \\ & x = 3, 4\end{aligned}$$

$$\begin{aligned}(5) \quad & x^3 \times (6xy)^2 \div (-3x^2y) \\ &= -\frac{x^3 \times 36x^2y^2}{3x^2y} \\ &= -12x^3y\end{aligned}$$

入試対策プリント（計算等基本問題） 24日目 解答と解説

解答 (1) -31 (2) $7x+12y$ (3) $7\sqrt{6}$ (4) $x=4, y=-3$

$$\begin{aligned}(1) \quad & 5+4\times(-3^2) \\ & =5+4\times(-9) \\ & =5-36 \\ & =-31\end{aligned}$$

$$\begin{aligned}(2) \quad & 4(3x+y)-6\left(\frac{5}{6}x-\frac{4}{3}y\right) \\ & =12x+4y-5x+8y \\ & =12x-5x+4y+8y \\ & =7x+12y\end{aligned}$$

$$\begin{aligned}(3) \quad & \sqrt{3}\times\sqrt{32}+3\sqrt{6} \\ & =\sqrt{3}\times4\sqrt{2}+3\sqrt{6} \\ & =4\sqrt{6}+3\sqrt{6} \\ & =7\sqrt{6}\end{aligned}$$

$$\begin{aligned}(4) \quad & \begin{cases} 2x+5y=-7\cdots\textcircled{1} \\ 3x+7y=-9\cdots\textcircled{2} \end{cases} \\ & \textcircled{1}\times3-\textcircled{2}\times2\text{を計算する} \\ & \begin{cases} 6x+15y=-21\cdots\textcircled{3} \\ 6x+14y=-18\cdots\textcircled{4} \end{cases} \\ & \textcircled{3}-\textcircled{4}\text{より} \\ & y=-3 \\ & \text{これを}\textcircled{1}\text{に代入すると} \\ & 2x+5\times(-3)=-7 \\ & \quad 2x-15=-7 \\ & \quad \quad 2x=-7+15 \\ & \quad \quad 2x=8 \\ & \quad \quad x=4\end{aligned}$$

入試対策プリント（計算等基本問題） 25日目 解答と解説

解答 (1) -17 (2) $-\frac{2}{7}$ (3) 12 (4) $6x-11$ (5) $2xy^2$ (6) $8\sqrt{5}$

$$\begin{aligned}(1) \quad & -7-10 \\ & =-(7+10) \\ & =-17\end{aligned}$$

$$\begin{aligned}(2) \quad & \frac{8}{7} \div (-4) \\ & = -\frac{8}{7 \times 4} \\ & = -\frac{2}{7}\end{aligned}$$

$$\begin{aligned}(3) \quad & 3 \times (-2)^2 \\ & = 3 \times 4 \\ & = 12\end{aligned}$$

$$\begin{aligned}(4) \quad & x+4+5(x-3) \\ & = x+4+5x-15 \\ & = 6x-11\end{aligned}$$

$$\begin{aligned}(5) \quad & xy \times 2y \\ & = 2xy^2\end{aligned}$$

$$\begin{aligned}(6) \quad & \sqrt{45} + 5\sqrt{5} \\ & = 3\sqrt{5} + 5\sqrt{5} \\ & = 8\sqrt{5}\end{aligned}$$

入試対策プリント（計算等基本問題） 26日目 解答と解説

解答 (1) -2 (2) $2x+3y$ (3) $5\sqrt{2}$ (4) $x=3, y=-5$ (5) $x=\frac{-3\pm\sqrt{17}}{2}$

$$\begin{aligned}(1) \quad & 6 \div (-3) \\ &= -(6 \div 3) \\ &= -2\end{aligned}$$

$$\begin{aligned}(2) \quad & (3x-2y)-(x-5y) \\ &= 3x-2y-x+5y \\ &= 2x+3y\end{aligned}$$

$$\begin{aligned}(3) \quad & \sqrt{8}+\sqrt{18} \\ &= 2\sqrt{2}+3\sqrt{2} \\ &= 5\sqrt{2}\end{aligned}$$

$$\begin{aligned}(4) \quad & \begin{cases} 3x+y=4 \\ x-2y=13 \end{cases} \\ & \begin{cases} 6x+2y=8 \cdots \textcircled{1} \\ x-2y=13 \cdots \textcircled{2} \end{cases} \\ & \textcircled{1}+\textcircled{2} \text{ より } 7x=21 \\ & \quad \quad \quad x=3 \\ & \text{これを}\textcircled{2}\text{に代入すると } 3-2y=13 \\ & \quad \quad \quad -2y=10 \\ & \quad \quad \quad y=-5\end{aligned}$$

$$\begin{aligned}(5) \quad & x^2+3x-2=0 \\ & x=\frac{-3\pm\sqrt{3^2-4\times 1\times (-2)}}{2} \\ & x=\frac{-3\pm\sqrt{9+8}}{2} \\ & x=\frac{-3\pm\sqrt{17}}{2}\end{aligned}$$

入試対策プリント（計算等基本問題） 27日目 解答と解説

解答 (1) -3 (2) -36 (3) $2a + 3b$ (4) $x^2 - 3xy + y^2$

$$\begin{aligned}(1) \quad & 5 - 8 \\ &= -(8 - 5) \\ &= -3\end{aligned}$$

$$\begin{aligned}(2) \quad & -4 \times (-3)^2 \\ &= -4 \times 9 \\ &= -36\end{aligned}$$

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

$$\begin{aligned}(4) \quad & (x + y)^2 - 5xy \\ &= x^2 + 2xy + y^2 - 5xy \\ &= x^2 + 2xy - 5xy + y^2 \\ &= x^2 - 3xy + y^2\end{aligned}$$

入試対策プリント（計算等基本問題） 28日目 解答と解説

解答 (1) -3 (2) $\frac{1}{7}$ (3) $5a + 2b$ (4) $\sqrt{3}$ (5) $2x^2 - 7$

$$\begin{aligned}(1) \quad & -8 + 5 \\ & = -(8 - 5) \\ & = -3\end{aligned}$$

$$\begin{aligned}(2) \quad & 1 + 3 \times \left(-\frac{2}{7}\right) \\ & = 1 - \frac{6}{7} \\ & = \frac{7}{7} - \frac{6}{7} \\ & = \frac{1}{7}\end{aligned}$$

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

$$\begin{aligned}(4) \quad & \sqrt{27} - \frac{6}{\sqrt{3}} \\ & = 3\sqrt{3} - 2\sqrt{3} \\ & = \sqrt{3}\end{aligned}$$

$$\begin{aligned}(5) \quad & (x + 1)^2 + (x - 4)(x + 2) \\ & = x^2 + 2x + 1 + x^2 - 2x - 8 \\ & = 2x^2 - 7\end{aligned}$$

入試対策プリント（計算等基本問題） 29日目 解答と解説

解答 (1) 7 (2) -5 (3) $\sqrt{3}$ (4) $4x - 5y$ (5) $6a^2b^2$

$$\begin{aligned}(1) \quad & 2 - (-5) \\ &= 2 + 5 \\ &= 7\end{aligned}$$

$$\begin{aligned}(2) \quad & \frac{2}{3} \div \left(-\frac{2}{15}\right) \\ &= -\frac{2 \times 15}{3 \times 2} \\ &= -5\end{aligned}$$

$$\begin{aligned}(3) \quad & 6\sqrt{3} - \sqrt{27} - \sqrt{12} \\ &= 6\sqrt{3} - 3\sqrt{3} - 2\sqrt{3} \\ &= (6 - 3 - 2)\sqrt{3} \\ &= \sqrt{3}\end{aligned}$$

$$\begin{aligned}(4) \quad & 3(2x - y) - 2(x + y) \\ &= 6x - 3y - 2x - 2y \\ &= 6x - 2x - 3y - 2y \\ &= 4x - 5y\end{aligned}$$

$$\begin{aligned}(5) \quad & 3a^2b \times 4ab^2 \div 2ab \\ &= \frac{3a^2b \times 4ab^2}{2ab} \\ &= 6a^2b^2\end{aligned}$$

入試対策プリント（計算等基本問題） 30日目 解答と解説

解答 (1) 11 (2) $\frac{a+10}{6}$ (3) 0 (4) $(a+10)(a-2)$ (5) $x = \frac{5 \pm \sqrt{13}}{6}$

$$\begin{aligned}(1) \quad & 5 - 2 \times (-3) \\ &= 5 + 6 \\ &= 11\end{aligned}$$

$$\begin{aligned}(2) \quad & \frac{2a+5}{3} - \frac{a}{2} \\ &= \frac{2(2a+5) - 3a}{6} \\ &= \frac{4a+10-3a}{6} \\ &= \frac{a+10}{6}\end{aligned}$$

$$\begin{aligned}(3) \quad & \sqrt{45} + 2\sqrt{5} - \sqrt{125} \\ &= 3\sqrt{5} + 2\sqrt{5} - 5\sqrt{5} \\ &= 0\end{aligned}$$

$$\begin{aligned}(4) \quad & a^2 + 8a - 20 \\ &= (a+10)(a-2)\end{aligned}$$

$$(5) \quad 3x^2 - 5x + 1 = 0$$

解の公式より

$$\begin{aligned}x &= \frac{5 \pm \sqrt{(-5)^2 - 4 \times 3 \times 1}}{2 \times 3} \\ x &= \frac{5 \pm \sqrt{25 - 12}}{6} \\ x &= \frac{5 \pm \sqrt{13}}{6}\end{aligned}$$