

「計算力の養成」 解答

No.01

1 ① $-\frac{1}{15}$  ②38.15 ③ $3x + 1$  ④ $-6x$  ⑤2 ⑥ $\frac{x-y}{6}$

2 ① $x = \frac{5}{3}$  ② $x = -1, y = -3$

3 ① $y = 2x + 5$  ② $y = x + 2$

4 ① $\angle x = 51^\circ$  ② $\angle x = 70^\circ$

No.02

1 ① $-\frac{7}{20}$  ②0.0062 ③ $-\frac{8}{3}a + 1$  ④ $-4b^2$  ⑤ $-40$  ⑥ $\frac{-x+4y}{6}$

2 ① $x = -\frac{12}{11}$  ② $x = -2, y = -2$

3 ① $y = -2x - 1$  ② $y = -x + 3$

4 ① $\angle x = 100^\circ$  ② $\angle x = 230^\circ$

No.03

1 ① $\frac{3}{10}$  ②1.25 ③ $-4x + 1$  ④ $-\frac{3}{4}y$  ⑤ $-17$  ⑥ $\frac{-5a+b}{6}$

2 ① $x = -\frac{6}{7}$  ② $x = 7, y = 4$

3 ① $y = \frac{1}{2}x + 10$  ② $y = -3x + 6$

4 ① $\angle x = 60^\circ$  ② $\angle x = 20^\circ$

No.04

1 ① $-\frac{1}{12}$  ②0.8 ③ $-8a + 1$  ④ $-\frac{8}{5}a^2$  ⑤5 ⑥ $\frac{x+y}{8}$

2 ① $x = -\frac{8}{3}$  ② $x = 3, y = 1$

3 ① $y = \frac{1}{3}x + 1$  ② $y = -2x + 8$

4 ① $\frac{1}{4}$  ② $\angle x = 65^\circ$

No.05

1 ①  $-\frac{7}{4}$  ② 0.75 ③  $\frac{9}{5}a^2 + 1$  ④  $\frac{9}{4}y$  ⑤ -20 ⑥  $\frac{-x+18y}{8}$

2 ①  $x = \frac{15}{22}$  ②  $x = -2, y = 7$

3 ①  $y = \frac{1}{3}x - 6$  ②  $y = -5x - 6$

4 ①  $\angle x = 65^\circ$  ②  $\frac{1}{3}$

No.06

1 ①  $-\frac{5}{3}$  ② 0.64 ③  $-\frac{9}{4}y^2 + 1$  ④  $-\frac{16}{3}ab$  ⑤ 36 ⑥  $\frac{-a+4b}{6}$

2 ①  $x = \frac{14}{13}$  ②  $x = 4, y = -5$

3 ①  $y = \frac{2}{3}x + 9$  ②  $y = -3x + 7$

4 ①  $\angle x = 70^\circ$  ②  $\frac{2}{3}$

No.07

1 ①  $\frac{37}{12}$  ② 0.55 ③  $-\frac{9}{2}y + 1$  ④  $-8b^2$  ⑤ -27 ⑥  $\frac{-3x-5y}{8}$

2 ①  $x = \frac{24}{7}$  ②  $x = -3, y = -7$

3 ①  $y = \frac{3}{4}x - 3$  ②  $y = -6x + 3$

4 ①  $\angle x = 70^\circ$  ②  $\frac{1}{3}$

No.08

1 ①  $-\frac{13}{10}$  ② 0.75 ③  $-6b^2 + 1$  ④  $-\frac{6}{5}x$  ⑤ -107 ⑥  $\frac{-a-7b}{10}$

2 ①  $x = -\frac{20}{13}$  ②  $x = -1, y = 2$

3 ①  $y = -\frac{3}{2}x + 2$  ②  $y = 5x - 23$

4 ①  $\angle x = 80^\circ$  ②  $\frac{3}{8}$

No.09

1 ① $\frac{5}{12}$  ②0.35 ③ $\frac{7}{4}a + 1$  ④ $4x^2$  ⑤-49 ⑥ $\frac{19}{3}y$

2 ① $x = \frac{28}{11}$  ② $x = 2, y = -3$

3 ① $y = \frac{2}{3}x + 2$  ② $y = \frac{1}{3}x - 4$

4 ① $\angle x = 67^\circ$  ② $\frac{1}{2}$

No.10

1 ① $\frac{17}{20}$  ②0.45 ③ $-\frac{7}{2}y + 1$  ④ $18a^2b$  ⑤-19 ⑥ $\frac{-2x-y}{6}$

2 ① $x = \frac{24}{5}$  ② $x = 2, y = -1$

3 ① $y = -\frac{3}{5}x - 10$  ② $y = \frac{5}{2}x - 8$

4 ① $\angle x = 110^\circ$  ② $\frac{7}{8}$

No.11

1 ① $-\frac{19}{8}$  ②1.5 ③ $-\frac{10}{3}b + 1$  ④ $-8xy^2$  ⑤19 ⑥ $\frac{4x+5y}{9}$

2 ① $x = \frac{16}{7}$  ② $x = -4, y = 1$

3 ① $y = -\frac{3}{4}x - 11$  ② $y = -\frac{3}{2}x + 10$

4 ① $\angle x = 166^\circ$  ②15 通り

No.12

1 ① $-\frac{19}{15}$  ②1.25 ③ $-\frac{9}{2}ab + 1$  ④ $-6x^4$  ⑤-27 ⑥ $-\frac{1}{4}y$

2 ① $x = \frac{36}{5}$  ② $x = 7, y = 4$

3 ① $y = -\frac{5}{4}x - 17$  ② $y = -3x + 2$

4 ① $\angle x = 118^\circ$  ②10 通り

No.13

1 ① $-\frac{23}{12}$  ②0.64 ③ $9y + 1$  ④ $12b^2$  ⑤ $-22$  ⑥ $\frac{2x+5y}{4}$

2 ① $x = 6$  ② $x = -1, y = 3$

3 ① $y = -\frac{1}{4}x + 1$  ② $y = -6x + 2$

4 ① $\angle x = 28^\circ$  ② $\frac{3}{10}$

No.14

1 ① $-\frac{31}{14}$  ②0.45 ③ $-\frac{9}{2}y + 1$  ④ $3b$  ⑤21 ⑥ $\frac{7a-b}{18}$

2 ① $x = -\frac{36}{47}$  ② $x = 4, y = -3$

3 ① $y = -\frac{3}{5}x - 4$  ② $y = -4x - 10$

4 ① $\angle x = 40^\circ$  ② $\frac{3}{5}$

No.15

1 ① $-4y + 1$  ② $2y^2$  ③ $\frac{-a+2b}{2}$  ④ $-39$  ⑤ $x^2 - 2x - 48$  ⑥ $x^2 - 8x + 16$

2 ① $x = \frac{20}{23}$  ② $x = -2, y = \frac{1}{2}$

3 ① $y = \frac{1}{2}x + 4$  ② $y = \frac{2}{3}x - 4$

4 ① $\angle x = 26^\circ$  ② $\frac{3}{10}$

No.16

1 ① $-4ab + 1$  ② $4a^2$  ③ $\frac{2x+4y}{3}$  ④ $-60$  ⑤ $a^2 + 5a - 24$  ⑥ $16a^2 - 24ab + 9b^2$

2 ① $x = -\frac{36}{7}$  ② $x = -7, y = -13$

3 ① $y = 2x + 6$  ② $y = -\frac{1}{2}x + 7$

4 ① $\angle x = 27^\circ$  ② $\frac{1}{5}$

No.17

1 ① $-5y + 1$  ② $18a^2b$  ③ $\frac{-2a+b}{4}$  ④2 ⑤ $4x^2 + 16x + 15$  ⑥ $x^2 - 10xy + 25y^2$

2 ① $x = -\frac{36}{5}$  ② $x = -\frac{11}{2}, y = -6$

3 ① $y = x + 5$  ② $y = -\frac{1}{5}x - 3$

4 ① $\angle x = 60^\circ$  ② $\frac{1}{6}$

No.18

1 ①72 ② $\frac{7}{2}a^2b$  ③ $\frac{-x-4y}{3}$  ④ $-3b + 1$  ⑤ $16x^2 - 40x + 25$  ⑥ $(x-2)(x-8)$

2 ① $x = -9$  ② $x = 3, y = -1$

3 ① $y = -x + 5$  ② $y = -\frac{3}{4}x - 8$

4 ① $\angle x = 75^\circ$  ② $\frac{7}{36}$

No.19

1 ①8 ② $-\frac{8}{3}y^2$  ③ $\frac{-2x+5y}{6}$  ④ $9x + 1$  ⑤ $16a^2 - 25b^2$  ⑥ $(2x-3)^2$

2 ① $x = -\frac{18}{11}$  ② $x = -2, y = 1$

3 ① $y = 2x - 6$  ② $y = -\frac{5}{2}x - 9$

4 ① $\angle x = 27^\circ$  ② $\frac{1}{4}$

No.20

1 ① $-\frac{5}{2}b + 1$  ② $\frac{9}{2}ab$  ③ $\frac{-a-3b}{2}$  ④27 ⑤ $36a^2 - 60ab + 25b^2$  ⑥ $(x-6)(x+5)$

2 ① $x = -\frac{5}{2}$  ② $x = 2, y = -6$  ③ $x = 4$

3 ① $y = 2x - 5$  ② $y = -\frac{7}{3}x - 2$  ③ $y = \frac{1}{3}x + 3$

No.21

1 ① $-12a + 1$  ② $4x^2y^2$  ③ $\frac{-x-3y}{3}$  ④ $25$  ⑤ $9a^2 - 30ab + 25b^2$  ⑥ $(a - 5)^2$

2 ① $x = -\frac{18}{5}$  ② $x = -2, y = 8$  ③ $x = 4$

3 ① $y = \frac{1}{2}x - 6$  ② $y = -\frac{5}{3}x + 3$  ③ $y = -\frac{1}{2}x + 4$

No.22

1 ① $-\frac{8}{3}x + 1$  ② $-\frac{16}{3}a^2$  ③ $\frac{x+3y}{4}$  ④ $16$  ⑤ $49 - b^2$  ⑥ $(a - 4)(a - 6)$

2 ① $x = -\frac{5}{14}$  ② $x = -2, y = -10$  ③ $x = 3$

3 ① $y = -3x + 7$  ② $y = \frac{1}{4}x - 10$  ③ $y = -\frac{1}{3}x + 4$

No.23

1 ① $-\frac{16}{3}ab + 1$  ② $-4xy$  ③ $\frac{-a-3b}{5}$  ④ $50$  ⑤ $x^2 - 6xy + 9y^2$  ⑥ $(7a - 6)(7a + 6)$

2 ① $x = -\frac{6}{11}$  ② $x = 1, y = 3$  ③ $x = 4$

3 ① $y = -5x - 4$  ② $y = -\frac{2}{5}x - 6$  ③ $y = \frac{3}{2}x - 9$

No.24

1 ① $-\frac{9}{2}a + 1$  ② $-\frac{12}{5}b^3$  ③ $\frac{a-b}{3}$  ④ $\frac{18}{5}$  ⑤ $a^2 + 4ab - 21b^2$  ⑥ $(5a - 9b)(5a + 9b)$

2 ① $x = -\frac{4}{19}$  ② $x = 4, y = 1$  ③ $x = 3$

3 ① $y = -4x - 5$  ② $y = \frac{6}{5}x - 8$  ③ $y = -\frac{2}{3}x + 4$

No.25

1 ① $-\frac{5}{2}b + 1$  ② $\frac{9}{2}ab$  ③ $\frac{-2a-3b}{4}$  ④ $\frac{9}{4}$  ⑤ $4x^2 - 12x + 9$  ⑥ $2(x + 1)(x + 3)$

2 ① $x = -\frac{5}{2}$  ② $x = -2, y = 10$  ③ $x = 4$

3 ① $y = 6x - 8$  ② $y = -\frac{7}{3}x - 2$  ③ $y = \frac{1}{3}x + 5$

No.26

1 ①  $-\frac{3}{2}xy + 1$  ②  $-\frac{15}{2}a^2b$  ③  $\frac{x-2y}{4}$  ④ 6 ⑤  $4x^2 - \frac{1}{9}$  ⑥  $3(x-3)^2$

2 ①  $x = \frac{24}{13}$  ②  $x = 4, y = -3$  ③  $x = -2$

3 ①  $y = -9x - 22$  ②  $y = -\frac{5}{4}x + 10$  ③  $y = -\frac{3}{2}x + 6$

No.27

1 ①  $-4b + 1$  ②  $-15x^2$  ③  $\frac{2a+5b}{4}$  ④ 81 ⑤  $9a^2 - 24ab + 16b^2$  ⑥  $5a(x-3y)(x+3y)$

2 ①  $x = -\frac{5}{14}$  ②  $x = -2, y = -3$  ③  $x = 3$

3 ①  $y = -5x - 3$  ②  $y = 3x - 5$  ③  $y = -\frac{1}{2}x + 8$

No.28

1 ①  $\frac{9}{2}ab + 1$  ②  $6x^3y$  ③  $\frac{4x+2y}{5}$  ④ 4 ⑤  $9a^2 - 16b^2$  ⑥  $2(a-5)^2$

2 ①  $x = -\frac{18}{11}$  ②  $x = 5, y = 5$  ③  $x = -4$

3 ①  $y = 22x - 100$  ②  $y = -2x + 3$  ③  $y = -\frac{3}{4}x - 9$

No.29

1 ①  $-27xy + 1$  ②  $2ab^2$  ③  $\frac{a-6b}{5}$  ④  $-\frac{10}{3}$  ⑤  $x^2 + 9x - 36$  ⑥  $2a(x-6y)(x+6y)$

2 ①  $x = -\frac{11}{3}$  ②  $x = -3, y = -5$  ③  $x = 9$

3 ①  $y = 45x - \frac{5}{9}$  ②  $y = -\frac{5}{3}x + 4$  ③  $y = \frac{5}{8}x - 10$

No.30

1 ①  $-48a + 1$  ②  $-36y^2$  ③  $\frac{-x-2y}{4}$  ④ 25 ⑤  $9x^2 - 42x + 49$  ⑥  $3(x-6)(x+3)$

2 ①  $x = \frac{3}{2}$  ②  $x = 4, y = 5$  ③  $x = \frac{24}{5}$

3 ①  $y = -15x + \frac{8}{5}$  ②  $y = -\frac{3}{4}x - 3$  ③  $y = 2x + 8$

No.31

1 ①  $-\frac{6x}{y} + 1$  ②  $8a^2b$  ③  $\frac{-2a+b}{4}$  ④  $-2$  ⑤  $4x^2 + 16x + 15$  ⑥  $(2x - 5y)^2$

2 ①  $x = -\frac{36}{5}$  ②  $x = -5, y = -2$  ③  $x = 3$

3 ①  $y = -8x + 12$  ②  $y = \frac{2}{3}x - 7$  ③  $y = -\frac{1}{3}x + 4$

No.32

1 ①  $-5x + 1$  ②  $6a^2$  ③  $\frac{x+3y}{4}$  ④  $3$  ⑤  $9b^2 - a^2$  ⑥  $(a - 6)^2$

2 ①  $x = -\frac{5}{14}$  ②  $x = -1, y = 1$  ③  $x = 3$

3 ①  $y = -10x + 18$  ②  $y = -\frac{4}{3}x + 10$  ③  $y = \frac{1}{3}x + 3$

No.33

1 ①  $-5b + 1$  ②  $-\frac{9}{2}ab$  ③  $\frac{-2a-3b}{4}$  ④  $18$  ⑤  $16x^2 - 24x + 9$  ⑥  $2(x + 1)(x + 3)$

2 ①  $x = -4$  ②  $x = 7, y = 4$  ③  $x = 3$

3 ①  $y = -\frac{1}{5}x - 15$  ②  $y = -3x + 2$  ③  $y = x + 5$

No.34

1 ①  $-3y + 1$  ②  $10xy$  ③  $\frac{-4x+4y}{3}$  ④  $24$  ⑤  $16x^2 - 32x + 15$  ⑥  $3(x - 5)^2$

2 ①  $x = -\frac{18}{5}$  ②  $x = -1, y = 2$  ③  $x = 3$

3 ①  $y = -\frac{1}{3}x - 19$  ②  $y = \frac{3}{4}x - 8$  ③  $y = \frac{3}{2}x - 6$

No.35

1 ①  $-7b + 1$  ②  $16ab$  ③  $\frac{3a-3b}{8}$  ④  $4\sqrt{15}$  ⑤  $x^2 - 8x + 16$  ⑥  $9(a - 2)(a + 2)$

2 ①  $x = -5$  ②  $x = -4, y = 3$  ③  $x = 8$

3 ①  $y = -\frac{3}{5}x + 23$  ②  $y = -\frac{4}{3}x + 15$  ③  $y = -\frac{1}{2}x + 4$



No.36

1 ① $-\frac{5}{3}x^2 + 1$  ② $3b$  ③ $\frac{4a-b}{5}$  ④ $6\sqrt{30}$  ⑤ $36m^2 - 25$  ⑥ $4(x-5)^2$

2 ① $x = -2$  ② $x = 2, y = \frac{3}{2}$  ③ $x = -\frac{3}{4}$

3 ① $y = -\frac{5}{7}x + 23$  ② $y = -\frac{2}{5}x - 10$  ③ $y = \frac{2}{3}x - 8$

No.37

1 ①3 ② $\sqrt{3}$  ③ $-6a^2 + 1$  ④ $12\sqrt{2}$  ⑤ $\frac{7x+y}{6}$  ⑥ $x^2 - 6x + 9$

⑦ $5(x-4)(x+1)$  ⑧ $y = \frac{2}{3}x - 4$

2 ① $x = 3$  ② $x = -3, y = -11$  ③ $x = \pm 2\sqrt{3}$  ④ $x = 2, 3$

3 ① $y = \frac{4}{5}x + 16$  ② $y = \frac{1}{2}x + 3$  ③P(-2, 4)

No.38

1 ①24 ② $-3\sqrt{2}$  ③ $-4ab + 1$  ④ $6\sqrt{10}$  ⑤ $\frac{11a-2b}{4}$  ⑥ $4a^2 - 12ab + 9b^2$

⑦ $5ab(a-2)(a+2)$  ⑧ $b = \frac{5}{8}a - \frac{9}{4}$

2 ① $x = -6$  ② $x = -1, y = -1$  ③ $x = -2 \pm 3\sqrt{2}$  ④ $x = -3, 5$

3 ① $y = -\frac{1}{3}x - 3$  ② $y = -\frac{2}{3}x + 9$  ③P(3, 2)

No.39

1 ①3 ② $3\sqrt{2}$  ③ $-4a + 1$  ④ $8\sqrt{6}$  ⑤ $\frac{8a+4b}{3}$  ⑥ $25x^2 - 81y^2$

⑦ $3x(x-6y)(x+2y)$  ⑧ $y = \frac{6}{5}x - \frac{12}{5}$

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

3 ① $y = -\frac{3}{4}x - 4$  ② $y = 4x - 5$  ③P(-4, 3)

No.40

1 ① $-\frac{22}{3}$  ② $-\sqrt{3}$  ③ $-\frac{4}{3}x + 1$  ④ $\frac{\sqrt{6}}{3}$  ⑤ $\frac{4a+3b}{5}$  ⑥ $9x^2 - 15x - 14$

⑦ $4a(a-2)^2$  ⑧ $y = \frac{4}{3}x + \frac{11}{6}$

2 ① $x = \frac{40}{3}$  ② $x = -1, y = -1$  ③ $x = -5 \pm 2\sqrt{3}$  ④ $x = 6, 8$

3 ① $y = -\frac{2}{3}x - 1$  ② $y = 2x - 8$  ③P(-3, 2)

No.41

1 ①13 ② $\frac{17a+8b}{5}$  ③ $\frac{\sqrt{6}}{4}$  ④ $-\frac{8}{3}b + 1$  ⑤ $-3\sqrt{2}$  ⑥ $4x^2 - 12x + 9$

⑦ $5b(a-5)^2$  ⑧ $b = -\frac{2}{3}a - \frac{5}{2}$

2 ① $x = -24$  ② $x = \frac{1}{3}, y = \frac{2}{3}$  ③ $x = -1, 7$  ④ $x = -1, 10$

3 ① $y = \frac{5}{2}x + 18$  ② $y = -\frac{1}{2}x + 3$  ③P(3, 2)

No.42

1 ①-6 ② $\frac{-4a+5b}{3}$  ③ $\frac{\sqrt{15}}{3}$  ④ $9y + 1$  ⑤ $-3\sqrt{2}$  ⑥ $64x^2 - 80x + 25$

⑦ $6y(x-1)^2$  ⑧ $b = -\frac{5}{4}a - \frac{9}{8}$

2 ① $x = -\frac{2}{7}$  ② $x = 3, y = 1$  ③ $x = -4 \pm 3\sqrt{2}$  ④ $x = -8, 5$

3 ① $y = -5x - 33$  ② $y = -\frac{1}{2}x + 3$  ③P(4, -3)

No.43

1 ①-6 ② $\frac{a+5b}{4}$  ③ $\frac{\sqrt{10}}{6}$  ④ $50xy$  ⑤ $4\sqrt{2}$  ⑥ $4x^2 - 14x + 12$

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

2 ① $x = -3$  ② $x = -2, y = 3$  ③ $x = 2, 8$  ④ $x = 0, -3$

3 ① $y = -\frac{1}{2}x - 1$  ② $y = 4x - 8$  ③P(-4, 3)

No.44

1 ① $-25$  ② $\frac{-x+2y}{6}$  ③ $\frac{\sqrt{2}}{2}$  ④ $\frac{4}{3}a$  ⑤ $-2\sqrt{3}$  ⑥ $4x^2 - 28xy + 49y^2$

⑦ $6y(x-3)(x+1)$  ⑧ $y = 2x - 4$

2 ① $x = \frac{5}{4}$  ② $x = 4, y = -5$  ③ $x = -1 \pm 3\sqrt{2}$  ④ $x = \pm \frac{\sqrt{5}}{2}$

3 ① $y = -\frac{3}{4}x + 9$  ② $y = \frac{1}{2}x + 10$  ③ $P(-3, -2)$

No.45

1 ① $2$  ② $\frac{x+11}{12}$  ③ $\frac{\sqrt{3}}{3}$  ④ $8x^2$  ⑤ $6$  ⑥ $25a^2 + 70ab + 49b^2$

⑦ $3a(3a-1)(3a+1)$  ⑧ $a = 2m - b$

2 ① $x = 2$  ② $x = -2, y = -1$  ③ $x = -1, 9$  ④ $x = \pm \frac{\sqrt{7}}{3}$

3 ① $y = \frac{1}{3}x - 7$  ② $y = -5x + 20$  ③ $P(4, 4)$

No.46

1 ① $-\frac{1}{18}$  ② $\frac{-31x+46y}{15}$  ③ $\frac{\sqrt{3}}{2}$  ④ $\frac{a}{3}$  ⑤ $10$  ⑥ $4x^2 + 16x + 15$

⑦ $4x(x-5)^2$  ⑧ $b = 3m - a$

2 ① $x = 4$  ② $x = 2, y = -4$  ③ $x = -14, 2$  ④ $x = \pm \frac{\sqrt{5}}{4}$

3 ① $y = -x - 11$  ② $y = -\frac{3}{2}x + 9$  ③ $P(-4, 2)$

No.47

1 ① $-12$  ② $\frac{-a-17b}{12}$  ③ $4$  ④ $3xy$  ⑤ $6$  ⑥ $9a^2 - 60a + 100$

⑦ $xy(x-5y)(x+5y)$  ⑧ $x = 5m - 2y$

2 ① $x = 4$  ② $x = 3, y = 1$  ③ $x = -2, 8$  ④ $x = \pm \frac{\sqrt{5}}{3}$

3 ① $y = -2x - 3$  ② $y = \frac{4}{3}x - 6$  ③ $P(-6, 3)$

No.48

1 ①16 ② $\frac{19x-7y}{10}$  ③3 ④18x ⑤ $-3\sqrt{3} - 7\sqrt{2}$  ⑥ $9x^2 - 3x - 56$

⑦ $2a(5a - 1)^2$  ⑧ $y = \frac{3}{4}x - 3$

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

3 ① $y = -2x + 10$  ② $y = \frac{3}{4}x - 6$  ③P(-4, 2)

No.49

1 ①20 ② $\frac{x-22y}{6}$  ③ $\frac{\sqrt{6}}{3}$  ④ $-2x^2$  ⑤ $-2\sqrt{3} - \sqrt{7}$  ⑥ $a^2b^2 - 4$

⑦ $5ab(b - 1)(b - 2)$  ⑧ $y = \frac{5}{2}x - \frac{4}{3}$

2 ① $x = -1$  ② $x = 3, y = -1$  ③ $x = 4 \pm 3\sqrt{3}$  ④ $x = \pm \frac{3\sqrt{5}}{4}$

3 ① $y = \frac{1}{2}x + 6$  ② $y = -3x + 8$  ③P(-6, -2)

No.50

1 ①-36 ② $\frac{13a+4b}{12}$  ③ $\frac{\sqrt{15}}{5}$  ④ $-2y$  ⑤9 ⑥ $49a^2 - 56a + 16$

⑦ $9a(2b - 1)(2b + 1)$  ⑧ $r = -\frac{l}{2} + 1$

2 ① $x = 7$  ② $x = 1, y = -1$  ③ $x = -1 \pm 2\sqrt{6}$  ④ $x = \pm \frac{2\sqrt{7}}{3}$

3 ① $y = -\frac{3}{2}x - 12$  ② $y = -\frac{1}{3}x - 1$  ③P(5, -6)

No.51

1 ①-19 ② $\frac{-a+b}{6}$  ③ $16 - 5\sqrt{10}$  ④ $-4x^2 + 1$  ⑤ $\frac{\sqrt{15}}{3}$  ⑥ $36 - 25b^2$

⑦ $4(3a - b)^2$  ⑧ $a = \frac{l}{2} - b$

2 ① $x = 1$  ② $x = 2, y = -4$  ③ $x = -2, -8$  ④ $x = -5 \pm 4\sqrt{2}$

3 ① $y = \frac{2}{3}x + 10$  ② $y = -\frac{5}{3}x + 10$  ③P(-5, -2)

No.52

1 ①-42 ②5 ③ $6\sqrt{3} - 12$  ④ $-2b + 1$  ⑤ $\frac{-5x+26y}{12}$  ⑥ $9a^2 - 15a - 14$

⑦ $9(3x - y)^2$  ⑧ $c = \frac{m}{3} - a - b$

2 ① $x = \frac{14}{3}$  ② $x = -3, y = -16$  ③ $x = 0, -4$  ④ $x = -4, -10$

3 ① $y = -3x + 12$  ② $y = -\frac{1}{4}x - 1$  ③P(-4, -2)

No.53

1 ①9 ② $\frac{3\sqrt{2}}{2}$  ③-4 ④ $3x - 1$  ⑤ $\frac{a+15b}{24}$  ⑥ $16a^2 - 40ab + 25b^2$

⑦ $4(4a - b)^2$  ⑧ $n = \frac{p}{4} - 3m$

2 ① $x = 1$  ② $x = -3, y = 4$  ③ $x = 7, -8$  ④ $x = \pm \frac{2\sqrt{5}}{5}$

3 ① $y = -\frac{3}{4}x - 6$  ② $a = -\frac{3}{2}$

No.54

1 ①-22 ② $\sqrt{5}$  ③ $7 + 2\sqrt{10}$  ④ $-\frac{3}{5}ab + 1$  ⑤ $6\sqrt{2} - 12$  ⑥ $9a^2 - b^2$

⑦ $4(5a - 2b)^2$  ⑧ $y = \frac{a}{3} - 2x$

2 ① $x = -5$  ② $x = 3, y = 7$  ③ $x = -4, -8$  ④ $x = \pm \frac{4\sqrt{3}}{3}$

3 ① $y = \frac{1}{3}x - 5$  ② $a = 2$

No.55

1 ①34 ②3 ③ $9 - 6\sqrt{2}$  ④ $-\frac{4}{5}xy + 1$  ⑤ $10\sqrt{2} - 20$  ⑥ $100a^2 + 50ab + 6b^2$

⑦ $4(4x - 3y)^2$  ⑧ $a = \frac{l}{5} - 3b$

2 ① $x = -2$  ② $x = -3, y = 14$  ③ $x = 6, 8$  ④ $x = \pm \frac{3\sqrt{5}}{5}$

3 ① $y = -\frac{3}{2}x + 15$  ② $a = -\frac{1}{4}$

No.56

1 ① $-4$  ② $\frac{\sqrt{2}}{2}$  ③ $3$  ④ $-\frac{8}{7}b^2 + 1$  ⑤ $12\sqrt{5} - 8$  ⑥ $16a^2 - 56a + 49$

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

2 ① $x = -4$  ② $x = -3, y = -4$  ③ $x = 7, -2$  ④ $x = \pm \frac{5\sqrt{7}}{7}$

3 ① $y = 2x + 12$  ② $a = -\frac{1}{2}$

No.57

1 ① $2$  ② $\sqrt{6}$  ③ $-3$  ④ $-12x^2 + 1$  ⑤ $-\frac{9\sqrt{3}}{5}$  ⑥ $25a^2b^2 - 81$

⑦ $(x - 2)(p - 1)$  ⑧ $3b(a - 2)^2$

2 ① $a = 7, 8$  ② $y = 4x + 6$

3  $x = 2, -\frac{3}{4}$

4 ① $x = 7.2$  ②A $(-4, 16)$  B $(2, 4)$

No.58

1 ① $6$  ② $2$  ③ $17 - 4\sqrt{15}$  ④ $-\frac{4}{9}b + 1$  ⑤ $-\frac{7\sqrt{5}}{4}$  ⑥ $9x^2 - 9x - 28$

⑦ $(y - 3)(1 - 4x)$  ⑧ $2a(x - 5)(x - 6)$

2 ① $a = 13, 14, 15$  ② $a = \frac{l}{3} - b - c$

3  $x = 6, -8$

4 ① $x = 8$  ②A $(-2, 2)$  B $(5, \frac{25}{2})$

No.59

1 ① $-\frac{1}{12}$  ② $12$  ③ $-13$  ④ $1 - \frac{1}{6}x$  ⑤ $-\frac{14\sqrt{3}}{5}$  ⑥ $25a^2 - 40ab + 16b^2$

⑦ $(5a - 4)(1 - 3a)$  ⑧ $5(2x - 3)(2x + 3)$

2 ① $a = 5, 6, 7$  ② $3a(g)$

3  $x = 1, 11$

4 ① $x = 6$  ②A $(-5, \frac{25}{4})$  B $(4, 4)$

No.60

①  $-\frac{1}{4}$  ② 10 ③  $12 - 4\sqrt{5}$  ④  $\frac{a}{3}$  ⑤  $\frac{\sqrt{3}}{6}$  ⑥  $9x^2 - 21xy + 10y^2$

⑦  $4(a - 3b)^2$  ⑧  $(a - b)(a - b - 9)$

② ①  $5a(g)$  ②  $y = -\frac{48}{x}$

③  $x = 7 \pm 2\sqrt{6}$

④ ①  $x = 20$  ②  $y = -2x + 8$