

例題

1 平方根の意味と使い方・平方根の大小

【例題】P.30,31

- 1 (1) ± 1 (2) ± 2 (3) $\pm\sqrt{2}$ (4) $\pm\sqrt{5}$ (5) 0 (6) $\pm\frac{3}{4}$ (7) $\pm\frac{\sqrt{7}}{5}$ (8) ± 0.2 (9) $\pm\sqrt{0.7}$
 2 (1) 3 (2) -3 (3) 3 (4) 3 (5) 3
 3 (1) $\sqrt{7} < \sqrt{10}$ (2) $-\sqrt{5} > -\sqrt{7}$ (3) $4 < \sqrt{17}$ (4) $3 < \sqrt{10} < 4$
 4 (1) 5, 6, 7, 8 (2) 5, 6, 7, 8, 9 (3) 2, 3, 4 (4) 2, 3, 4, 5
 5 (1) $\sqrt{2}$, π , $-\sqrt{5}$, $-\frac{\sqrt{7}}{5}$, $\sqrt{3}-4$ (2) ア × イ ○ ウ × エ ○ オ ×
 6 (1) $0.\dot{1}3\dot{5}$ (2) $\frac{5}{9}$

【必修問題 A】P.32,33

- 問題 1 (1) ± 2 (2) ± 7 (3) ± 8 (4) ± 1 (5) ± 0.5 (6) ± 0.3
 (7) $\pm\frac{1}{6}$ (8) $\pm\frac{4}{9}$ (9) $\pm\sqrt{17}$ (10) $\pm\sqrt{13}$ (11) $\pm\sqrt{0.3}$ (12) $\pm\sqrt{\frac{5}{6}}$
 問題 2 (1) 5 (2) 9 (3) 0.7 (4) $\frac{1}{2}$ (5) -6 (6) -10 (7) -0.1 (8) $-\frac{3}{4}$
 (9) 8 (10) -2 (11) 6 (12) -4 (13) 8 (14) -5 (15) 0.36 (16) $\frac{2}{3}$
 問題 3 (1) $\sqrt{7} < \sqrt{10}$ (2) $9 > \sqrt{80}$ (3) $-\sqrt{3} < -\sqrt{2}$ (4) $-5 < -\sqrt{14}$
 (5) $\frac{2}{3} < \sqrt{\frac{2}{3}}$ (6) $\sqrt{0.3} > 0.3$ (7) $5 < \sqrt{30} < 6$ (8) $-3 < -\sqrt{7} < -2$
 問題 4 (1) 10, 11, 12, 13, 14, 15 (2) 2, 3, 4, 5, 6, 7, 8 (3) 5, 6, 7, 8, 9, 10, 11, 12
 (4) 21, 22, 23, 24 (5) 2, 3 (6) 4, 5, 6, 7
 問題 5 (1) $\sqrt{17}$, 4π , $-\sqrt{11}$, $-\frac{\sqrt{2}}{4}$ (2) ア ○ イ ○ ウ ○ エ ○ オ ×
 問題 6 (1) $0.\dot{6}$ (2) $0.\dot{6}\dot{3}$ (3) $0.\dot{3}2\dot{4}$ (4) $0.2\dot{7}$
 (5) $\frac{4}{9}$ (6) $\frac{35}{99}$ (7) $\frac{1}{15}$ (8) $\frac{71}{333}$

【必修問題 B】P.34

- 問題 1 (1) ± 9 (2) $\pm\sqrt{35}$ (3) $\pm\sqrt{15}$ (4) ± 6 (5) $\pm\sqrt{2.5}$ (6) ± 0.4 (7) $\pm\sqrt{\frac{14}{15}}$ (8) $\pm\frac{3}{5}$
 問題 2 (1) 2 (2) -4 (3) 0.8 (4) -0.3 (5) $\frac{6}{7}$ (6) $-\frac{1}{3}$
 (7) -5 (8) -3 (9) 12 (10) 9 (11) $\frac{4}{5}$ (12) 0.5
 問題 3 (1) $\sqrt{14} < \sqrt{17}$ (2) $8 > \sqrt{57}$ (3) $\sqrt{0.7} > 0.7$
 (4) $-5 < -\sqrt{21}$ (5) $3 < \sqrt{15} < 4$ (6) $-6 < -\sqrt{30} < \sqrt{38}$
 問題 4 (1) 5, 6, 7, 8, 9, 10 (2) 12, 13, 14, 15 (3) 7, 8, 9
 問題 5 (1) $0.8\dot{3}$ (2) $0.3\dot{1}\dot{8}$ (3) $\frac{1}{3}$ (4) $\frac{12}{111}$
 問題 6 $\sqrt{5}$, $-\sqrt{0.4}$, π , $\frac{\sqrt{3}}{4}$

例題

2 平方根の乗法と除法

【例題】 P.36,37

- 1 (1) $\sqrt{42}$ (2) $\sqrt{70}$ (3) 6 (4) $\sqrt{6}$ (5) $\sqrt{21}$ (6) 5
 2 (1) $\sqrt{48}$ (2) $\sqrt{24}$ (3) $\sqrt{125}$ (4) $\sqrt{2}$ (5) $\sqrt{\frac{3}{8}}$ (6) $\sqrt{\frac{5}{12}}$
 3 (1) $2\sqrt{6}$ (2) $6\sqrt{21}$ (3) $\frac{\sqrt{3}}{4}$ (4) $\frac{\sqrt{7}}{10}$
 4 (1) $\frac{\sqrt{15}}{5}$ (2) $\frac{2\sqrt{6}}{9}$ (3) $\frac{5\sqrt{2}}{6}$
 5 (1) $6\sqrt{10}$ (2) $-20\sqrt{15}$ (3) $4\sqrt{6}$ (4) $12\sqrt{6}$ (5) $14\sqrt{10}$ (6) $-45\sqrt{3}$
 (7) $\frac{\sqrt{21}}{7}$ (8) $\sqrt{3}$ (9) $-\frac{3\sqrt{2}}{5}$ (10) $-3\sqrt{2}$ (11) 18 (12) $\frac{3}{2}$

【必修問題 A】 P.38,39

- 問題 1 (1) $\sqrt{6}$ (2) $-\sqrt{42}$ (3) 10 (4) -4 (5) $\sqrt{7}$ (6) 2 (7) 3 (8) -5
 問題 2 (1) $\sqrt{18}$ (2) $\sqrt{28}$ (3) $\sqrt{75}$ (4) $\sqrt{180}$ (5) $\sqrt{5}$ (6) $\sqrt{6}$ (7) $\sqrt{2}$ (8) $\sqrt{2}$
 問題 3 (1) $2\sqrt{2}$ (2) $2\sqrt{3}$ (3) $3\sqrt{6}$ (4) $4\sqrt{7}$ (5) $\frac{\sqrt{5}}{3}$ (6) $\frac{\sqrt{7}}{4}$
 (7) $\frac{\sqrt{10}}{7}$ (8) $\frac{2\sqrt{2}}{5}$ (9) $\frac{\sqrt{3}}{10}$ (10) $\frac{\sqrt{21}}{10}$ (11) $\frac{3\sqrt{3}}{10}$ (12) $\frac{\sqrt{6}}{100}$
 問題 4 (1) $\frac{\sqrt{6}}{3}$ (2) $\frac{4\sqrt{7}}{7}$ (3) $2\sqrt{5}$ (4) $\frac{2\sqrt{6}}{3}$ (5) $\frac{7\sqrt{2}}{10}$ (6) $\frac{\sqrt{3}}{4}$ (7) $\frac{3\sqrt{5}}{2}$ (8) $\sqrt{2}$
 問題 5 (1) $3\sqrt{14}$ (2) $4\sqrt{6}$ (3) $6\sqrt{5}$ (4) $5\sqrt{21}$ (5) $15\sqrt{6}$ (6) $30\sqrt{2}$
 (7) $\sqrt{6}$ (8) $\frac{4\sqrt{2}}{5}$ (9) $\frac{\sqrt{6}}{3}$ (10) 2 (11) $-2\sqrt{5}$ (12) 6

【必修問題 B】 P.40

- 問題 1 (1) $\sqrt{32}$ (2) $\sqrt{45}$ (3) $\sqrt{150}$ (4) $\sqrt{3}$
 問題 2 (1) $3\sqrt{2}$ (2) $5\sqrt{3}$ (3) $4\sqrt{5}$ (4) $5\sqrt{7}$ (5) $\frac{\sqrt{3}}{5}$ (6) $\frac{3\sqrt{5}}{8}$ (7) $\frac{\sqrt{2}}{10}$ (8) $\frac{\sqrt{57}}{10}$
 問題 3 (1) $\frac{\sqrt{30}}{6}$ (2) $2\sqrt{2}$ (3) $\frac{2\sqrt{5}}{3}$ (4) $\frac{3\sqrt{3}}{2}$
 問題 4 (1) $\sqrt{35}$ (2) -6 (3) $\sqrt{3}$ (4) 2 (5) $6\sqrt{10}$ (6) $7\sqrt{6}$
 (7) $18\sqrt{2}$ (8) $\frac{\sqrt{35}}{5}$ (9) $\frac{2\sqrt{3}}{9}$ (10) $4\sqrt{2}$ (11) 28 (12) $6\sqrt{2}$
 (13) $-\sqrt{3}$ (14) $\sqrt{6}$ (15) -15 (16) -30 (17) $\sqrt{2}$ (18) $-\frac{\sqrt{5}}{10}$

【例題】 P.41

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

【必修問題 A】 P.42

- 問題 1 (1) $9\sqrt{2}$ (2) $5\sqrt{5}$ (3) $-\sqrt{10}$ (4) 0 (5) $6\sqrt{2}-3$
 (6) $2\sqrt{7}+4\sqrt{3}$ (7) $4\sqrt{6}-2\sqrt{10}$ (8) $-2\sqrt{5}-2$ (9) $-5\sqrt{2}+5$
 問題 2 (1) $-\sqrt{2}$ (2) $5\sqrt{5}$ (3) $-5\sqrt{2}+4$ (4) $10\sqrt{2}$ (5) $5\sqrt{3}$
 (6) $-\sqrt{2}$ (7) $\sqrt{6}$ (8) $\frac{\sqrt{6}}{3}$ (9) $\frac{\sqrt{3}}{12}$
 問題 3 (1) $\sqrt{3}$ (2) $5\sqrt{5}$ (3) $5\sqrt{2}$

【必修問題 B】 P.43

- 問題 1 (1) $9\sqrt{3}$ (2) $\sqrt{5}$ (3) $3\sqrt{6}$ (4) $-7\sqrt{10}$ (5) 0
 (6) $-\sqrt{6}+\sqrt{2}$ (7) $3\sqrt{10}+2\sqrt{7}$ (8) $-3\sqrt{6}+\sqrt{7}$ (9) $2\sqrt{2}+3$
 問題 2 (1) $-\sqrt{10}$ (2) $7\sqrt{6}$ (3) $6\sqrt{2}$ (4) $3\sqrt{3}$ (5) $3\sqrt{2}$ (6) $5\sqrt{2}+2$
 (7) $3\sqrt{2}+10\sqrt{3}$ (8) $-\sqrt{5}+5\sqrt{7}$ (9) $\sqrt{3}+\sqrt{6}$ (10) $-6\sqrt{2}-\sqrt{10}$ (11) $\sqrt{5}$ (12) $3\sqrt{2}$
 (13) $-\frac{3\sqrt{5}}{10}$ (14) $3\sqrt{3}$ (15) $2\sqrt{6}$ (16) $3\sqrt{5}-\frac{25}{2}$ (17) $2\sqrt{2}$ (18) 0
 問題 3 (1) $2\sqrt{3}$ (2) $7\sqrt{2}$ (3) $-3\sqrt{6}$ (4) $5\sqrt{5}$ (5) $2\sqrt{2}$ (6) $3\sqrt{3}$

【例題】P.44

- 1 (1) $2\sqrt{5}+5\sqrt{2}$ (2) $3-\sqrt{2}$
- 2 (1) $12+8\sqrt{5}$ (2) $\sqrt{2}$ (3) $11+2\sqrt{30}$ (4) 25
- 3 $\frac{\sqrt{7}-1}{2}$

【必修問題 A】P.45

- 問題 1 (1) $3\sqrt{2}+2\sqrt{3}$ (2) $3\sqrt{30}-6\sqrt{3}$ (3) $3+\sqrt{3}$ (4) $6\sqrt{5}-6$ (5) 25
 (6) $\sqrt{7}+\sqrt{5}$ (7) $2-\sqrt{3}$ (8) $-5+\sqrt{5}$ (9) $\sqrt{3}-\sqrt{2}$
- 問題 2 (1) $33-11\sqrt{3}$ (2) $-6+\sqrt{6}$ (3) $11-4\sqrt{7}$ (4) $21+6\sqrt{6}$ (5) 1
 (6) 14 (7) $-3\sqrt{5}$ (8) -4 (9) $\sqrt{5}$
- 問題 3 (1) $2-\sqrt{3}$ (2) $2\sqrt{5}-2\sqrt{3}$ (3) $\frac{\sqrt{6}+\sqrt{2}}{2}$

【必修問題 B】P.46

- 問題 1 (1) $8+3\sqrt{2}$ (2) $21\sqrt{2}-7\sqrt{3}$ (3) $18-6\sqrt{3}$ (4) $-6+6\sqrt{6}$ (5) $-3+\sqrt{6}$
 (6) $\sqrt{2}$ (7) $\sqrt{6}$ (8) $5\sqrt{3}$ (9) $\sqrt{15}-\sqrt{2}$
- 問題 2 (1) $\frac{\sqrt{14}+2\sqrt{3}}{2}$ (2) $\frac{3\sqrt{5}-\sqrt{6}}{3}$ (3) $\frac{10-3\sqrt{5}}{5}$
- 問題 3 (1) $-38-2\sqrt{10}$ (2) $-23-4\sqrt{3}$ (3) $21+6\sqrt{10}$ (4) $49-8\sqrt{3}$ (5) 8 (6) 17
 (7) 7 (8) $4\sqrt{3}$ (9) $-3-\sqrt{2}$ (10) $3-\sqrt{2}$ (11) 12 (12) -5
- 問題 4 (1) $\frac{\sqrt{10}-2}{6}$ (2) $\sqrt{7}+\sqrt{2}$ (3) $\frac{3+\sqrt{5}}{2}$

【例題】 P.48,49

- 1 (1) 22.36 (2) 223.6 (3) 70.71 (4) 0.2236 (5) 0.7071 (6) 6.708
 2 (1) 2 (2) $3+2\sqrt{35}$ (3) -1 (4) ① $4+6\sqrt{2}$ ② $34+12\sqrt{2}$
 3 (1) 2 (2) $\sqrt{7}-2$ (3) $4\sqrt{7}-7$
 4 (1) $n=5$ (2) $a=2, 9, 14, 17, 18$
 5 $2\sqrt{13}$ cm

【必修問題 A】 P.50,51

- 問題 1 (1) 24.49 (2) 77.46 (3) 244.9 (4) 774.6 (5) 0.7746 (6) 0.2449 (7) 0.07746 (8) 0.02449
 問題 2 (1) 2 (2) $3+2\sqrt{35}$ (3) 3 (4) ① 1 ② $4\sqrt{5}+8$ ③ $8\sqrt{5}$
 問題 3 (1) 3 (2) $\sqrt{14}-3$ (3) 27 (4) $6\sqrt{14}-14$
 問題 4 (1) $n=6$ (2) $n=30$ (3) $n=15$ (4) $a=1, 10, 17, 22, 25, 26$
 問題 5 5 cm

【必修問題 B】 P.52,53

- 問題 1 (1) 2.828 (2) 4.472 (3) 5.656 (4) 8.944 (5) 14.14 (6) 0.2236 (7) 0.202 (8) 0.559
 問題 2 (1) 5 (2) ① 3 ② $4\sqrt{10}$ ③ 20 (3) ① 6 ② $12\sqrt{7}$ ③ 32 (4) 0
 問題 3 (1) $a=1, 11, 17, 19$ (2) $a=1, 5, 6$ (3) $a=15, 20$
 問題 4 (1) 4 (2) $\sqrt{22}-4$ (3) $22-5\sqrt{22}$ (4) $8\sqrt{22}-22$
 問題 5 13cm