

1 / 제곱근과 실수

- 8~24쪽
- 001 2, -2 002 9, -9
- 003 10, -10 004 $\frac{1}{3}, -\frac{1}{3}$ 005 $\frac{2}{5}, -\frac{2}{5}$
- 006 0.6, -0.6 007 49, 7, -7 008 12, -12
- 009 0 010 없다. 011 $\frac{4}{3}, -\frac{4}{3}$ 012 0.5, -0.5
- 013 7, -7 014 $\frac{3}{5}, -\frac{3}{5}$ 015 8, -8
- 016 0.4, -0.4 017 $\pm\sqrt{7}$ 018 $\pm\sqrt{12}$
- 019 $\pm\sqrt{155}$ 020 $\pm\sqrt{\frac{4}{5}}$ 021 $\pm\sqrt{0.3}$
- 022 $\sqrt{11}, -\sqrt{11}, \sqrt{19}, -\sqrt{19}, \sqrt{\frac{2}{3}}, -\sqrt{\frac{2}{3}}, \sqrt{0.57}, -\sqrt{0.57}$
- 023 $\pm\sqrt{5}, \sqrt{5}, \pm\sqrt{1.3}, \sqrt{1.3}, \pm\sqrt{\frac{2}{7}}, \sqrt{\frac{2}{7}}$
- 024 5 025 -8 026 $\frac{1}{9}$ 의 양의 제곱근, $\frac{1}{3}$
- 027 0.16의 음의 제곱근, -0.4 028 2, $\pm\sqrt{2}$ 029 4, 2
- 030 36, -6 031 6 032 2.4 033 $-\frac{1}{3}$ 034 11
- 035 $\frac{3}{4}$ 036 -0.7 037 7 038 $\frac{1}{5}$ 039 -1.9
- 040 43 041 2.6 042 $-\frac{1}{2}$ 043 19 044 0.3 045 -6
- 046 -2 047 48 048 1 049 $\frac{1}{9}$ 050 $-\frac{1}{3}$
- 051 7, 5, 7, 5, 12 052 7 053 0.8 054 $\frac{1}{3}$ 055 1
- 056 39 057 0.9 058 -22 059 $>, 2a$
- 060 $<, 15a$ 061 $>, -7a$ 062 $<, -18a$
- 063 $<, -3a$ 064 $>, -8a$ 065 $<, 5a$
- 066 $>, 11a$ 067 $8a$ 068 $3a$ 069 $-10a$
- 070 $-3a$ 071 $>, x-1$ 072 $<, -1+x$
- 073 $>, -x+1$ 074 $<, 1-x$ 075 $a-3$
- 076 $-a+7$ 077 $-a-2$ 078 $4-a$
- 079 $3a+5$ 080 5 081 $2a-2$
- 082 ① $3^2 \times 5$ ② 5, 5, 5 083 2 084 30 085 6
- 086 ① $2^2 \times 7$ ② 7, 7, 7 087 15 088 21 089 10
- 090 자연수 x 에 대하여 $\sqrt{15+x}$ 가 자연수가 되려면 $15+x$ 는

15

보다 큰 (자연수)² 꼴인 수이어야 한다.
즉, $15+x = \text{16}, \text{25}, \text{36}, \dots$ 이므로
 $x = \text{1}, \text{10}, \text{21}, \dots$
따라서 $\sqrt{15+x}$ 가 자연수가 되도록 하는 가장 작은 자연수 x 의 값은

1

이다.
- 091 2 092 11 093 8 094 14
- 095 자연수 x 에 대하여 $\sqrt{20-x}$ 가 자연수가 되려면 $20-x$ 는

20

보다 작은 (자연수)² 꼴인 수이어야 한다.
즉, $20-x = \text{1}, \text{4}, \text{9}, \text{16}$ 이므로
 $x = \text{19}, \text{16}, \text{11}, \text{4}$
따라서 $\sqrt{20-x}$ 가 자연수가 되도록 하는 가장 작은 자연수 x 의 값은

4

이다.
- 096 1 097 6 098 35 099 59 100 $<, <$
- 101 $>$ 102 $<$ 103 $<$ 104 $>$ 105 $>$

- 106 $<, <, >$ 107 $>$ 108 $>$ 109 $>$ 110 $<$
- 111 $>$ 112 9, $>$ 113 $<$ 114 $<$ 115 $<$
- 116 36, $>, <$ 117 $<$ 118 $<$ 119 $>$
- 120 9, 9/5, 6, 7, 8 121 1, 2, 3, 4
- 122 10, 11, 12, 13, 14, 15 123 4, 5, 6, 7, 8, 9
- 124 4, 5, 6, 7, 8, 9 125 8 126 유 127 무 128 무
- 129 유 130 유 131 무 132 $\times$ 133 $\circ$ 134 $\circ$
- 135 $\times$ 136 $\circ$ 137 $\times$ 138 ① 2, $\sqrt{8}, \sqrt{8}$ ② $\sqrt{8}, \sqrt{8}$
- 139 ① 3, $\sqrt{10}, \sqrt{10}$ ② $\sqrt{10}, 2-\sqrt{10}$ 140 $\sqrt{5}, \sqrt{5}$
- 141 $\sqrt{13}, 1-\sqrt{13}$ 142 $\sqrt{5}, -2+\sqrt{5}$
- 143 P: $1-\sqrt{2}$, Q: $2+\sqrt{2}$ 144 P: $-5-\sqrt{5}$, Q: $-4+\sqrt{10}$
- 145 P: $3-\sqrt{10}$, Q: $4+\sqrt{18}$ 146 P: $-\sqrt{8}$, Q: $1+\sqrt{17}$
- 147 P: $-6-\sqrt{5}$, Q: $-5+\sqrt{13}$
- 148 $\sqrt{2}, \sqrt{2}, \sqrt{2}, \sqrt{2}, -1+\sqrt{2}, -1-\sqrt{2}$
- 149 P: $-4+\sqrt{5}$, Q: $-4-\sqrt{5}$ 150 P: $3+\sqrt{10}$, Q: $3-\sqrt{10}$
- 151 A: $-\sqrt{2}$, B: $1+\sqrt{2}$ 152 $\times$ 153 $\times$ 154 $\circ$
- 155 $\circ$ 156 $\times$ 157 $\times$ 158 $\circ$ 159 $\circ$ 160 $\times$
- 161 $\times$ 162 $\times$ 163 3, 9, $>, >, >$
- 164 4, 16, $<, <, <$ 165 $<, <$ 166 $<$
- 167 $<$ 168 $>$ 169 $<$ 170 $>$ 171 $<$ 172 2,702
- 173 2,724 174 2,728 175 6,797
- 176 6,804 177 6,856 178 5,65
- 179 5,86 180 5,58 181 5,79
- 182 2,849 183 2, 2, 2 184 $2, \sqrt{6}-2$
- 185 3, $\sqrt{10}-3$ 186 $4, \sqrt{17}-4$ 187 $5, \sqrt{29}-5$
- 188 $5, \sqrt{32}-5$ 189 1, 2, 3, 2, 2, $\sqrt{2}-1$
- 190 $4, \sqrt{7}-2$ 191 $2, \sqrt{13}-3$ 192 $2, \sqrt{23}-4$
- 193 $1, 4-\sqrt{10}$ 194 $7-\sqrt{15}$

25~26쪽 기본 문제 $\times$ 확인하기

- 1 (1) ± 6 (2) $\pm \frac{5}{3}$ (3) ± 0.4 (4) ± 4
- 2 (1) $\pm \sqrt{3}$ (2) $\sqrt{21}$ (3) $\sqrt{0.7}$ (4) $-\sqrt{\frac{3}{7}}$
- 3 (1) 7 (2) -9 (3) $\frac{2}{5}$ (4) -0.8
- 4 (1) $\pm \sqrt{3}$ (2) ± 5 (3) -3 (4) $\frac{1}{4}$
- 5 (1) 8 (2) $-\frac{8}{7}$ (3) -14 (4) 0.3
- 6 (1) 18 (2) 5 (3) -3 (4) 2
- 7 (1) $3a$ (2) $8a$ (3) $-a$ (4) $4a$
- 8 (1) $a-2$ (2) $-a+5$ (3) $a+3$ (4) $-1+a$
- 9 (1) 3 (2) 2
- 10 (1) $<$ (2) $>$ (3) $>$ (4) $>$
- 11 (1) $-\sqrt{\frac{1}{16}}, 0.\dot{3}$ (2) $\sqrt{0.9}, \sqrt{35}, \frac{\sqrt{3}}{2}$
(3) $\sqrt{0.9}, -\sqrt{\frac{1}{16}}, \sqrt{35}, 0.\dot{3}, \frac{\sqrt{3}}{2}$
- 12 (1) $\overline{AB}$ 의 길이: $\sqrt{10}$, $\overline{AE}$ 의 길이: $\sqrt{10}$
(2) P: $3-\sqrt{10}$, Q: $3+\sqrt{10}$
- 13 (1) $>$ (2) $<$ (3) $>$ (4) $<$
- 14 (1) 1,428 (2) 8,503

- 15 (1) 2, 14 (2) 73, 5
 16 (1) 2, $\sqrt{7}-2$ (2) 2, $\sqrt{12}-3$

27~29쪽 학교 시험 문제 ✕ 확인하기

- 1 ④ 2 ㄷ, ㄹ 3 3 4 ①, ④ 5 16 6 ③
 7 ④ 8 3 9 ① 10 ⑤ 11 ⑤ 12 26
 13 ㄱ, ㄷ, ㄹ, ㅁ 14 ②, ④ 15 ③ 16 ①, ② 17 ⑤
 18 1583 19 $2-\sqrt{11}$

2 / 근호를 포함한 식의 계산

- 32~45쪽 001 6, 30 002 $\sqrt{22}$ 003 $\sqrt{21}$
 004 $\sqrt{\frac{1}{3}}$ 005 2 006 $\sqrt{70}$ 007 $\sqrt{2}$ 008 2, 3, 10, 15
 009 $2\sqrt{42}$ 010 -32 011 $6\sqrt{5}$ 012 $-30\sqrt{10}$
 013 $24\sqrt{30}$ 014 $-8\sqrt{2}$ 015 26, 13
 016 $\sqrt{5}$ 017 3 018 $\sqrt{\frac{1}{10}}$ 019 $-\sqrt{\frac{2}{7}}$
 020 4, 24, 2 021 $3\sqrt{3}$ 022 $-5\sqrt{\frac{3}{2}}$ 023 -12
 024 $3, \frac{3}{7}, 12$ 025 $2\sqrt{18}$ 026 $\sqrt{14}$ 027 $-\sqrt{10}$
 028 2, 6, 2, 6 029 $3\sqrt{3}$ 030 $5\sqrt{2}$ 031 $10\sqrt{10}$
 032 $-3\sqrt{7}$ 033 $-4\sqrt{5}$ 034 7, 3 / 7, 3
 035 $\frac{\sqrt{5}}{7}$ 036 $\frac{\sqrt{13}}{10}$ 037 $-\frac{\sqrt{3}}{8}$ 038 100, 10, 10
 039 $-\frac{\sqrt{17}}{10}$ 040 2, 8 041 $\sqrt{90}$ 042 $\sqrt{48}$ 043 $\sqrt{10}$
 044 7, 98 045 $-\sqrt{600}$ 046 $-\sqrt{27}$ 047 54
 048 2, 5 / 2, 25 049 $\sqrt{\frac{5}{9}}$ 050 $\sqrt{\frac{7}{16}}$ 051 $-\sqrt{\frac{10}{49}}$
 052 $-\sqrt{\frac{8}{81}}$ 053 $\sqrt{\frac{75}{4}}$ 054 $-\sqrt{\frac{28}{9}}$
 055 100, 10, 10, 26.46 056 100, 10, 10, 83.67
 057 7, 7, 2.646, 264.6 058 100, 10, 10, 0.8367
 059 100, 10, 10, 0.2646 060 24.49 061 77.46
 062 0.7746 063 97.52 064 0.9752
 065 0.3084 066 $\sqrt{2}, \sqrt{2} / \frac{\sqrt{2}}{2}$ 067 $\frac{4\sqrt{5}}{5}$
 068 $\frac{9\sqrt{10}}{10}$ 069 $-\frac{7\sqrt{11}}{11}$ 070 $\frac{\sqrt{6}}{3}$
 071 $\frac{\sqrt{21}}{7}$ 072 $\sqrt{3}, \sqrt{3} / \frac{\sqrt{21}}{3}$ 073 $\frac{\sqrt{35}}{7}$
 074 $\frac{\sqrt{39}}{13}$ 075 $-\frac{\sqrt{110}}{10}$ 076 $\frac{\sqrt{5}}{5}$
 077 $-\frac{\sqrt{14}}{7}$ 078 $\sqrt{2}, \sqrt{2} / \frac{3\sqrt{2}}{4}$ 079 $\frac{2\sqrt{5}}{15}$
 080 $\frac{\sqrt{14}}{4}$ 081 $\frac{\sqrt{35}}{42}$ 082 $\frac{\sqrt{30}}{20}$
 083 $\frac{\sqrt{6}}{2}$ 084 $\frac{\sqrt{10}}{10}$ 085 $\frac{\sqrt{42}}{10}$ 086 $2 / \sqrt{3}, 2, \sqrt{3} / \frac{5\sqrt{3}}{6}$
 087 $\frac{7\sqrt{2}}{6}$ 088 $\frac{2\sqrt{6}}{3}$ 089 $\frac{\sqrt{6}}{4}$ 090 $\frac{\sqrt{10}}{15}$ 091 $\frac{\sqrt{14}}{12}$ 092 $\frac{\sqrt{35}}{14}$
 093 2 094 2 095 $\sqrt{42}$ 096 $6\sqrt{2}$ 097 $\frac{36\sqrt{5}}{5}$

- 098 $-2\sqrt{15}$ 099 $-6\sqrt{5}$ 100 $\frac{\sqrt{14}}{7}$ 101 $\frac{\sqrt{3}}{3}$
 102 $-\frac{16\sqrt{3}}{9}$ 103 $-\frac{4}{3}$ 104 $\frac{2\sqrt{10}}{5}$ 105 $\frac{10}{7}$
 106 2, $5\sqrt{2}$ 107 $3\sqrt{5}$ 108 $8\sqrt{6}$ 109 $\frac{13\sqrt{11}}{4}$
 110 $10\sqrt{7}$ 111 $8\sqrt{10}$ 112 3, $\sqrt{2}$ 113 $2\sqrt{3}$ 114 $-4\sqrt{6}$
 115 $\frac{5\sqrt{5}}{6}$ 116 $3\sqrt{7}$ 117 $-3\sqrt{10}$ 118 5, $2\sqrt{2}$
 119 $4\sqrt{3}$ 120 $-2\sqrt{5}$ 121 $-7\sqrt{6}$ 122 $-\frac{\sqrt{7}}{3}$
 123 $-\frac{11\sqrt{10}}{12}$ 124 $\frac{9\sqrt{11}}{10}$
 125 5, 1, 6, 4, $6\sqrt{2}+2\sqrt{3}$ 126 $-\sqrt{2}+5\sqrt{5}$
 127 $11\sqrt{7}-3\sqrt{3}$ 128 $6\sqrt{3}+\sqrt{13}$ 129 $2\sqrt{6}-\sqrt{11}$
 130 $-3\sqrt{10}-8\sqrt{5}$ 131 $3\sqrt{7}-7\sqrt{15}$ 132 2, 6, $8\sqrt{2}$
 133 $8\sqrt{5}$ 134 $\sqrt{3}$ 135 $-\sqrt{2}$ 136 $-\sqrt{5}$ 137 $9\sqrt{3}$
 138 $12\sqrt{2}-5\sqrt{7}$ 139 0 140 2, $5\sqrt{2}$ 141 $-3\sqrt{3}$
 142 $-\sqrt{5}$ 143 $\frac{7\sqrt{3}}{9}$ 144 $\frac{13\sqrt{2}}{2}$ 145 $6\sqrt{7}-2\sqrt{3}$
 146 $\frac{\sqrt{2}}{2}-\frac{\sqrt{5}}{5}$ 147 $\sqrt{3}, \sqrt{3}, \sqrt{6}+\sqrt{21}$
 148 $3\sqrt{5}+\sqrt{55}$ 149 $2\sqrt{42}-4\sqrt{15}$ 150 $-2\sqrt{15}-5$
 151 $-\sqrt{14}+\sqrt{35}$ 152 $-\sqrt{6}-2\sqrt{3}$
 153 $\sqrt{7}, \sqrt{7}, \sqrt{14}+\sqrt{21}$ 154 $\sqrt{10}+\sqrt{14}$
 155 $2\sqrt{33}-\sqrt{6}$ 156 $-3\sqrt{2}-\sqrt{30}$ 157 $-3\sqrt{5}+2\sqrt{6}$
 158 $-\sqrt{14}-2\sqrt{10}$ 159 $\sqrt{2}, \sqrt{2} / \sqrt{6}+\sqrt{10}$
 160 $\frac{\sqrt{30}+\sqrt{65}}{2}$ 161 $\frac{7-2\sqrt{7}}{7}$ 162 $\frac{2\sqrt{5}+\sqrt{6}}{8}$
 163 $\frac{\sqrt{15}-9\sqrt{10}}{10}$ 164 $-\frac{3\sqrt{2}+2\sqrt{3}}{12}$ 165 $\frac{2\sqrt{6}+\sqrt{10}}{4}$
 166 $\frac{4+\sqrt{6}}{6}$ 167 $\frac{3\sqrt{15}+4\sqrt{10}}{10}$ 168 $\frac{5\sqrt{6}-2\sqrt{21}}{12}$
 169 $\frac{-7\sqrt{2}+3\sqrt{35}}{21}$ 170 $\frac{24}{5}$ 171 $12\sqrt{2}$ 172 $3\sqrt{15}$
 173 $-\frac{\sqrt{2}}{4}$ 174 $\sqrt{3}-2\sqrt{7}$ 175 $-\sqrt{3}-3\sqrt{2}$
 176 $4\sqrt{3}$ 177 $\sqrt{7}$ 178 $\frac{1}{2}+\frac{3\sqrt{3}}{2}$ 179 $-\frac{4\sqrt{6}}{3}$
 180 $2\sqrt{5}-\frac{4\sqrt{3}}{3}$ 181 $-\frac{7\sqrt{6}}{6}$ 182 $4\sqrt{5}-2\sqrt{3}$

46~47쪽 기본 문제 ✕ 확인하기

- 1 (1) $-2\sqrt{21}$ (2) $10\sqrt{6}$ (3) $\sqrt{3}$ (4) $-5\sqrt{2}$
 2 (1) $4\sqrt{2}$ (2) $-3\sqrt{6}$ (3) $\frac{\sqrt{7}}{6}$ (4) $\frac{\sqrt{13}}{10}$
 3 (1) $\sqrt{27}$ (2) $\sqrt{3}$ (3) $\sqrt{3}$ (4) $-\sqrt{\frac{25}{6}}$
 4 (1) 22, 36 (2) 223, 6 (3) 0.2236 (4) 0.02236
 5 (1) $\frac{6\sqrt{5}}{5}$ (2) $\frac{\sqrt{6}}{2}$ (3) $\frac{4\sqrt{7}}{21}$ (4) $\frac{\sqrt{6}}{2}$
 6 (1) $\sqrt{6}$ (2) $3\sqrt{10}$ (3) $3\sqrt{2}$ (4) $-2\sqrt{3}$
 7 (1) $10\sqrt{2}$ (2) $2\sqrt{5}$ (3) $8\sqrt{3}$ (4) $\frac{9\sqrt{7}}{20}$
 8 (1) $-3\sqrt{6}-9\sqrt{11}$ (2) $-\sqrt{2}+5\sqrt{5}$ (3) $-2\sqrt{3}+\sqrt{7}$
 (4) $-7\sqrt{13}+\sqrt{2}$
 9 (1) $2\sqrt{2}$ (2) $-\sqrt{3}$ (3) $2\sqrt{7}$ (4) $\sqrt{2}$

- 10 (1) $7\sqrt{5}$ (2) $\frac{3\sqrt{2}}{2}$ (3) $-\sqrt{5}+2\sqrt{2}$ (4) $-\frac{4\sqrt{2}}{3}$
 11 (1) $\sqrt{22}+\sqrt{14}$ (2) $5-2\sqrt{5}$ (3) $-2\sqrt{6}-6$ (4) $-3\sqrt{2}+3\sqrt{6}$
 12 (1) $\frac{\sqrt{10}+\sqrt{15}}{5}$ (2) $\frac{5\sqrt{2}-2\sqrt{10}}{10}$ (3) $\frac{6-\sqrt{6}}{4}$ (4) $\frac{2\sqrt{6}+\sqrt{15}}{6}$
 13 (1) $3\sqrt{3}$ (2) $4\sqrt{3}-6\sqrt{2}$ (3) $-5+3\sqrt{3}$

48~49쪽 학교 시험 문제 × 확인하기

- 1 ④ 2 ③ 3 $3\sqrt{2}$ 4 12 5 ③ 6 ④
 7 $\frac{2\sqrt{2}}{5}$ 8 ⑤ 9 ⑤ 10 ② 11 $\frac{33}{28}$ 12 -3
 13 ⑤ 14 ④ 15 $5\sqrt{2}-5\sqrt{6}$

3 / 다항식의 곱셈

52~62쪽 001 $5x, 15$ 002 $2ab+a+10b+5$

- 003 $-2ab+4a-b+2$ 004 $3x^2+5x-12xy-20y$
 005 $3ac-ad-6bc+2bd$ 006 $4x, 2, 6x^2+7x+2$
 007 $8a^2-14ab-15b^2$ 008 $-2x^2+11x+21$
 009 $6x^2+2xy+7x+3y-3$ 010 a^2-b^2-a+b
 011 3 012 -13 013 5 014 -13
 015 $x, x, x^2+10x+25$ 016 a^2+4a+4
 017 $x^2+\frac{1}{2}x+\frac{1}{16}$ 018 $4a^2+12a+9$
 019 $25x^2+20xy+4y^2$ 020 $\frac{1}{4}a^2+\frac{1}{3}ab+\frac{1}{9}b^2$
 021 $4x^2-12x+9$ 022 $16a^2-8ab+b^2$
 023 $4, 4, x^2-8x+16$ 024 a^2-6a+9
 025 $x^2-x+\frac{1}{4}$ 026 $9a^2-6a+1$ 027 $x^2-12xy+36y^2$
 028 $4a^2-20ab+25b^2$ 029 x^2+4x+4
 030 $9a^2+24ab+16b^2$ 031 $3, x^2-9$
 032 $16-a^2$ 033 $a^2-\frac{1}{4}$ 034 $9x^2-4$
 035 $49a^2-1$ 036 $4x^2-25y^2$ 037 $16a^2-9b^2$
 038 $x^2-\frac{1}{9}y^2$ 039 a^2-36 040 $9x^2-4y^2$
 041 $5x, 5x, 5x, 4-25x^2$ 042 $16a^2-b^2$ 043 $9-a^2$
 044 $4y^2-9x^2$ 045 $7, 7, x^2+9x+14$
 046 a^2+5a+6 047 y^2-y-12 048 $b^2-3b-10$
 049 $x^2-5x-24$ 050 $a+a-\frac{10}{9}$ 051 y^2-6y+5
 052 $4b, 4b, a^2+6ab+8b^2$ 053 $x^2+9xy+18y^2$
 054 $a^2-3ab-4b^2$ 055 $x^2-5xy-14y^2$ 056 $a^2+5ab-36b^2$
 057 $x^2+4xy-60y^2$ 058 $a^2-\frac{8}{7}ab+\frac{1}{7}b^2$
 059 $1, 2, 1, 2x^2+7x+3$ 060 $6a^2+17a+12$
 061 $2x^2-7x-15$ 062 $20a^2-9a-18$
 063 $-6y^2+7y-2$ 064 $15b^2-\frac{5}{2}b+\frac{1}{10}$
 065 $-28x^2+10x+2$ 066 $1, 2, 5y, 2x^2+9xy+10y^2$
 067 $15a^2-ab-6b^2$ 068 $6x^2-xy-12y^2$ 069 $4a^2+\frac{5}{3}ab-\frac{1}{6}b^2$
 070 $-15x^2+19xy-6y^2$ 071 $3a^2-10ab+8b^2$

- 072 $18x^2+9xy-14y^2$ 073 $10a^2-2ab+5b^2$
 074 $8x+20$ 075 $17x^2+6xy$
 076 $-3a^2-4ab+13b^2$ 077 $5x^2-9y^2$
 078 $5x^2-7x-26$ 079 $3b^2-12b-14$ 080 $5a^2-ab+5b^2$
 081 x^2-x+6 082 $-8b^2-3b+7$
 083 $12x^2-29xy+14y^2$ 084 $A=4, B=16$
 085 $A=2, B=4$ 086 $A=5, B=4$ 087 $A=7, B=3$
 088 $A=1, B=1$ 089 41 090 1, 1, 1, 2601
 091 40401 092 102,01 093 1, 1, 1, 2401
 094 9409 095 98,01 096 1, 1, 1, 2499
 097 8091 098 8,99 099 3, 3, 3, 2703
 100 1120 101 39798 102 ④
 103 $7+4\sqrt{3}$ 104 $12+2\sqrt{35}$ 105 $29+12\sqrt{5}$
 106 $10-4\sqrt{6}$ 107 $8-2\sqrt{15}$ 108 $29-6\sqrt{22}$
 109 -1 110 -5 111 3 112 $11+6\sqrt{3}$
 113 $-5+2\sqrt{10}$ 114 $-1+5\sqrt{7}$ 115 $16+11\sqrt{2}$
 116 $24-\sqrt{6}$ 117 $29-20\sqrt{10}$ 118 -6
 119 $\sqrt{3}-1, \sqrt{3}-1 / \sqrt{3}-1$ 120 $2+\sqrt{3}, 2+\sqrt{3} / 4+2\sqrt{3}$
 121 $\sqrt{5}-\sqrt{2}$ 122 $2\sqrt{7}+2\sqrt{3}$ 123 $\frac{-3\sqrt{2}+\sqrt{6}}{2}$
 124 $2\sqrt{3}+\sqrt{2}$ 125 $\sqrt{6}-2$ 126 $\sqrt{3}+\sqrt{2}$
 127 $3-2\sqrt{2}$ 128 $8+3\sqrt{7}$ 129 $4-\sqrt{15}$
 130 $2+\sqrt{3}$ 131 $2ab, 16, 6, 10$ 132 $4ab, 16, 12, 4$
 133 $2ab, 1, 12, 13$ 134 $4ab, 1, 24, 25$ 135 30 136 40
 137 2 138 7 139 49 140 -4 141 2
 142 2, 36, 2, 34 143 4, 36, 4, 32 144 2, 9, 2, 11
 145 4, 9, 4, 13 146 47 147 21 148 83 149 20
 150 방법 ① 2, 2, 4, -1, -1, 4 방법 ② $4\sqrt{3}, 4$
 151 1 152 -5 153 2 154 20

63쪽 기본 문제 × 확인하기

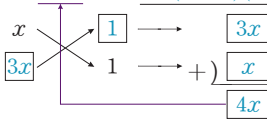
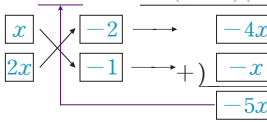
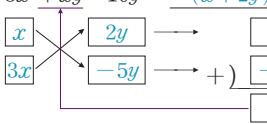
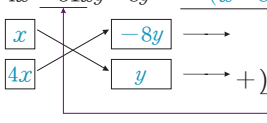
- 1 $x^2+xy+9x+y+8$
 2 (1) $a^2+\frac{2}{5}a+\frac{1}{25}$ (2) $x^2-4xy+4y^2$ (3) $9x^2-6x+1$
 (4) $a^2+8ab+16b^2$
 3 (1) $a^2-\frac{1}{9}$ (2) $4x^2-y^2$ (3) a^2-81 (4) $25y^2-x^2$
 4 (1) $x^2+\frac{3}{4}x+\frac{1}{8}$ (2) $a^2-4ab-21b^2$ (3) $6x^2+7xy+2y^2$
 (4) $-4a^2+23a-15$
 5 (1) $8x^2-20x+24$ (2) $11x^2-3x-17$
 6 (1) 10609 (2) 4761 (3) 24,91 (4) 2652
 7 (1) $8+2\sqrt{7}$ (2) 1 (3) $5+4\sqrt{2}$ (4) $16+\sqrt{3}$
 8 (1) $\frac{\sqrt{3}-1}{2}$ (2) $-2\sqrt{5}-5$ (3) $\sqrt{6}-\sqrt{2}$ (4) $5+2\sqrt{6}$
 9 (1) 20 (2) 36
 10 (1) 14 (2) 12

64~65쪽 학교 시험 문제 × 확인하기

- 1 ⑤ 2 ① 3 ② 4 ④ 5 ⑤ 6 11
 7 ⑤ 8 -2 9 ③ 10 ③ 11 ⑤ 12 10
 13 ⑤ 14 5 15 ④

4 / 인수분해

- 68~81쪽
- 003 $b^2 - 10b + 25$ 004 $x^2 - 16$ 005 $x^2 - 6x - 7$
 006 $6a^2 - 11a - 10$ 007 $x, x + 5$ 008 $a + 2, a - 2$
 009 4, $xy, y(1-x)$ 010 $y, 2-x, 3(x+1)$
 011 $\perp, \equiv$ 012 $x, y, x-y$ 013 $x(y-2z)$
 014 $x^2(1+x)$ 015 $-3a(2a+b)$ 016 $xy(x+y-1)$
 017 $2a(a-2b+c)$ 018 $-ab(x^2-x+c)$
 019 $x, 2, x+2$ 020 $(a+b)(3-b)$ 021 $(2x-5)(a-b)$
 022 $(x-4)(x-1)$ 023 $(a-2b)(3-x)$
 024 $3x(x-5)$ 025 ④ 026 3, 3, 3
 027 $(x+7)^2$ 028 $(a+5b)^2$ 029 $2(a+6)^2$
 030 $(a-4)^2$ 031 $(x-\frac{1}{2})^2$ 032 $-2(x-2y)^2$
 033 $x(x-9y)^2$ 034 5, 5, 5 035 $(4x+1)^2$
 036 $(5a+4b)^2$ 037 $3(3x+y)^2$ 038 $(9a-1)^2$
 039 $(3x-2)^2$ 040 $(2x-7y)^2$ 041 $2a(2x-5y)^2$
 042 2, 4 043 16 044 100 045 25 046 25 047 1
 048 4 049 $\pm 6, \pm 12$ 050 $-20, 20$
 051 $-40, 40$ 052 $-48, 48$ 053 $-24, 24$
 054 9 055 3, $x-3$ 056 $(x+6)(x-6)$
 057 $(a+7)(a-7)$ 058 $(5+x)(5-x)$ 059 $(8+a)(8-a)$
 060 $(11+x)(11-x)$ 061 $(x+\frac{1}{2})(x-\frac{1}{2})$
 062 $(\frac{1}{10}+a)(\frac{1}{10}-a)$ 063 $2x, 3, 2x-3$
 064 $(4a+5)(4a-5)$ 065 $(6a+1)(6a-1)$
 066 $(2+7x)(2-7x)$ 067 $(12+5x)(12-5x)$
 068 $(9+2x)(9-2x)$ 069 $(3x+\frac{1}{4})(3x-\frac{1}{4})$
 070 $(\frac{1}{2}a+1)(\frac{1}{2}a-1)$ 071 $4y, 4y, 4y$
 072 $(a+5b)(a-5b)$ 073 $(x+6y)(x-6y)$
 074 $(b+2a)(b-2a)$ 075 $(3x+2y)(3x-2y)$
 076 $(7a+8b)(7a-8b)$ 077 $(3y+10x)(3y-10x)$
 078 $(\frac{3}{5}a+2b)(\frac{3}{5}a-2b)$ 079 4, 2, 2
 080 $x(5+2x)(5-2x)$ 081 $5(x+\frac{1}{6})(x-\frac{1}{6})$
 082 $a(x+9y)(x-9y)$ 083 $a(8a+7b)(8a-7b)$
 084 $2(6x+\frac{1}{9}y)(6x-\frac{1}{9}y)$ 085 $6ab(1+2ab)(1-2ab)$
 086 7 087 1, 3, 1, 3, 4, $(x+1)(x+3)$
 088 4, -1, $(x+4)(x-1)$ 089 2, 3, $(x+2)(x+3)$
 090 -2, -4, $(x-2)(x-4)$
 091 1, -2, 1, -2, -1, $(x+y)(x-2y)$
 092 7, -4, $(x+7y)(x-4y)$
 093 -5, -6, $(a-5b)(a-6b)$
 094 5, -4, $(a+5b)(a-4b)$ 095 $(x+3)(x-2)$
 096 $(x+2)(x+5)$ 097 $(a+1)(a+5)$
 098 $(a+2)(a-7)$ 099 $(x-4)(x-6)$
 100 $2(x+3)(x+5)$ 101 $3(a+3)(a-4)$
 102 $a(x-1)(x-3)$ 103 $(x+3y)(x-6y)$

- 104 $(x+y)(x+7y)$ 105 $(a+b)(a+2b)$
 106 $(a-2b)(a-3b)$ 107 $(x+2y)(x-5y)$
 108 $3(x+5y)(x-3y)$ 109 $2(a+b)(a-3b)$
 110 $x(x-3y)(x-4y)$ 111 $2x+1$
 112 $3x^2+4x+1 = \frac{(x+1)(3x+1)}{}$

 113 $2x^2-5x+2 = \frac{(x-2)(2x-1)}{}$

 114 $3x^2+xy-10y^2 = \frac{(x+2y)(3x-5y)}{}$

 115 $4x^2-31xy-8y^2 = \frac{(x-8y)(4x+y)}{}$

 116 $(a-1)(3a+5)$ 117 $(2a+1)(3a+4)$
 118 $(2x+7)(4x-9)$ 119 $(3x+2)(5x-7)$
 120 $3(x-3)(2x-1)$ 121 $a(a+3)(4a-3)$
 122 $(3a+b)(5a+b)$ 123 $(a-2b)(3a+5b)$
 124 $(2x-3y)(4x-y)$ 125 $(2a+3b)(5a-2b)$
 126 $(3x+2y)(4x-5y)$ 127 $2(x+6y)(2x+3y)$
 128 $a(2x-3y)(3x-2y)$ 129 $3b(a-b)(3a+b)$
 130 0 131 $A=2, B=6$ 132 $A=12, B=2$
 133 $A=7, B=3$ 134 $A=8, B=1$ 135 -1 136 15
 137 13 138 35, 50, 450 139 500 140 660
 141 23, 30, 900 142 4900 143 1600 144 10000
 145 35, 25, 60, 10, 600 146 5200 147 6800
 148 3, 3, 21, 21, 3, 8, 1200 149 20000 150 78
 151 7 152 $x+2, 2, 20, 360$ 153 10000
 154 10 155 9200 156 9700 157 $\sqrt{3}+3$
 158 $x-y, \sqrt{3}+\sqrt{2}, -2\sqrt{2}, 8$ 159 $9\sqrt{2}$ 160 $8\sqrt{5}$
 161 $12\sqrt{2}+2$ 162 55 163 49 164 A, A, 2
 165 $(x+3)(x+4)$ 166 $(2x-1)(3x-7)$
 167 $(x+y+1)(x+y-2)$ 168 $(2x-y+2)(2x-y-3)$
 169 A, B, $A-B, 2a+1, 2a+1, 3a-1$
 170 $(a+b-2)(a-b)$ 171 $4(2x+1)(x-2)$
 172 $(x+y+1)(x-3y+5)$ 173 $(x+y)(2x-y-3)$
 174 $a+1, a+1, a+1$ 175 $(a+1)(a+b)$
 176 $(a+6)(a+x)$ 177 $(x-y)(x+y-3)$
 178 $(x+1)(x-1)^2$ 179 $(a+4)(b+3)(b-3)$
 180 $x+2, x+2, x+2$ 181 $(2x+4y-3)(2x-4y-3)$
 182 $(a+2b+1)(a+2b-1)$ 183 $(5+x-3y)(5-x+3y)$
 184 $(x+y+1)(x-y-1)$ 185 $(x-4y+3)(x-4y-3)$

82~83쪽

기본 문제 × 확인하기

- 1 (1) $2x, x-4, y(x-4)$ (2) $(a+1)^2, (a+1)(a^2-2)$
 2 (1) $a(a+5)$ (2) $3x(x-2y)$ (3) $y(x-y+4)$
 (4) $(a-3)(a-1)$
 3 (1) $\left(a+\frac{1}{8}\right)^2$ (2) $(2x-3)^2$ (3) $(3x+4y)^2$ (4) $2(2a-b)^2$
 4 (1) 9 (2) 9 (3) ± 10 (4) ± 4
 5 (1) $(a+4)(a-4)$ (2) $\left(\frac{1}{3}x+2\right)\left(\frac{1}{3}x-2\right)$
 (3) $(7y+2x)(7y-2x)$ (4) $5b(a+3)(a-3)$
 6 (1) $(x+3)(x+5)$ (2) $(a-6)(a-3)$ (3) $(x-2y)(x+5y)$
 (4) $(a-4b)(a-3b)$ (5) $2(x-3)(x+12)$
 (6) $3(x-6y)(x+2y)$
 7 (1) $(x+2)(3x+2)$ (2) $(2a-1)(2a+3)$
 (3) $(x-2y)(5x+3y)$ (4) $(2a-7b)(5a+2b)$
 (5) $2(x-1)(3x+2)$ (6) $b(a-b)(7a-4b)$
 8 (1) 1500 (2) 4900 (3) 2400
 9 (1) 10000 (2) 42
 10 (1) $(x+1)^2$ (2) $(3x+2y+3)(3x+2y-3)$
 11 (1) $(5x+1)(x+7)$ (2) $(x+y+1)(x-3y+17)$
 12 (1) $(x+1)(y+1)$ (2) $(x-1)(a+1)(a-1)$
 13 (1) $(x+y+3)(x-y+3)$ (2) $(4+2x-y)(4-2x+y)$

84~85쪽

학교 시험 문제 × 확인하기

- 1 ④ 2 $2x-2$ 3 ③ 4 ② 5 1 6 ⑤
 7 $2x-11$ 8 ③ 9 ④ 10 ①, ③ 11 2 12 $-4\sqrt{2}$
 13 ③ 14 $2x-1$ 15 ②, ④

5 / 이차방정식

88~106쪽

- 001 ○ 002 ○ 003 × 004 ○
 005 × 006 × 007 ○ 008 ○ 009 $a \neq 0$
 010 $a \neq 2$ 011 $a \neq -5$ 012 $a \neq 3$
 013 $a \neq 2$ 014 ② 015 ○ 016 × 017 ×
 018 ○ 019 ○ 020 ×

021

x의 값	좌변	우변	참, 거짓
-1	$(-1)^2 - 3 \times (-1) + 2 = 6$	0	거짓
0	$0^2 - 3 \times 0 + 2 = 2$	0	거짓
1	$1^2 - 3 \times 1 + 2 = 0$	0	참
2	$2^2 - 3 \times 2 + 2 = 0$	0	참
3	$3^2 - 3 \times 3 + 2 = 2$	0	거짓

→ 해: $x=1$ 또는 $x=2$

- 022 $x=-1$ 023 $x=3$ 024 $x=-1$ 또는 $x=1$
 025 1, 1, 1, 2 026 6 027 -6 028 2 029 -9
 030 -1 031 0, 4 032 6 033 17 034 1 035 8
 036 3 037 0, 0, -1, 3 038 $x=2$ 또는 $x=5$
 039 $x=0$ 또는 $x=-7$ 040 $x=\frac{3}{2}$ 또는 $x=\frac{4}{3}$
 041 $x=\frac{9}{2}$ 또는 $x=-\frac{9}{2}$ 042 $x=\frac{5}{7}$ 또는 $x=-\frac{1}{3}$

043 $x+2, 0, x+2, 0, -2$

044 $x=0$ 또는 $x=6$

045 $x=0$ 또는 $x=-7$

046 $x=0$ 또는 $x=\frac{1}{3}$

047 $x=0$ 또는 $x=\frac{5}{4}$

048 $x=0$ 또는 $x=-\frac{7}{2}$

049 $x-2, 0, x-2, -2, 2$

050 $x=-5$ 또는 $x=5$

051 $x=-\frac{8}{3}$ 또는 $x=\frac{8}{3}$

052 $x=-\frac{4}{3}$ 또는 $x=\frac{4}{3}$

053 $x=-\frac{1}{2}$ 또는 $x=\frac{1}{2}$

054 $x=-1$ 또는 $x=1$

055 $x+1, 0, x+1, -3, -1$

056 $x=-2$ 또는 $x=1$

057 $x=2$ 또는 $x=3$

058 $x=-5$ 또는 $x=4$

059 $x=-4$ 또는 $x=2$

060 $x=-4$ 또는 $x=7$

061 $x=-2$ 또는 $x=5$

062 $3x+2, 3x+2, 0, -\frac{2}{3}, 1$

063 $x=-\frac{1}{2}$ 또는 $x=\frac{3}{4}$

064 $x=\frac{1}{3}$ 또는 $x=5$

065 $x=-\frac{1}{2}$ 또는 $x=3$

066 $x=-\frac{5}{2}$ 또는 $x=-2$

067 $x=-6$ 또는 $x=\frac{7}{2}$

068 ③

069 2, 2, 4, $-4/2, x=-4$

070 $a=-8, x=4$

071 $a=3, x=\frac{3}{2}$

072 $a=0, x=-\frac{2}{5}$

073 $a=-5, x=1$

074 $a=-2, x=-2$

075 $x+1, -1/0$ 076 × 077 ○ 078 × 079 ○

080 ○ 081 -4, 4

082 81 083 $\frac{9}{4}$ 084 4

085 2 086 12 087 1 088 $\frac{15}{4}$ 089 $-\frac{9}{4}$ 090 16, 4

091 -6, 6

092 -5, 5

093 -1, 1

094 $2, x^2-2x+\frac{k}{2}=0, 2$

095 16

096 -20 097 2

098 -9 099 1

100 $x=\pm\sqrt{10}$

101 $x=\pm 4$

102 $x=\pm\sqrt{5}$

103 13, $\pm\sqrt{13}$

104 $x=\pm\sqrt{11}$

105 $x=\pm\frac{\sqrt{42}}{6}$

106 $\sqrt{3}, -1, \sqrt{3}$

107 $x=4\pm 2\sqrt{5}$

108 $x=2$ 또는 $x=8$

109 6, $\sqrt{6}, -7, \sqrt{6}$

110 $x=-4$ 또는 $x=0$

111 $x=\frac{1\pm\sqrt{13}}{4}$

112 $x=\frac{-5\pm 2\sqrt{2}}{2}$

113 (1) -22, 25, -22, 25, 5, 3, 5, $\sqrt{3}, -5\pm\sqrt{3}$

(2) 7, -7, 9, -7, 9, 3, 2, 3, $\sqrt{2}, 3\pm\sqrt{2}$

114 $x=1\pm\sqrt{10}$

115 $x=-4\pm\sqrt{3}$

116 $x=\frac{3\pm\sqrt{5}}{2}$

117 $x=3\pm\sqrt{7}$

118 $x=\frac{1\pm\sqrt{5}}{4}$

119 $x=-2\pm\sqrt{7}$

120 근의 공식에 $a=\boxed{1}, b=\boxed{3}, c=\boxed{-6}$ 을 대입하면

$$x = \frac{-\boxed{3} \pm \sqrt{\boxed{3}^2 - 4 \times \boxed{1} \times (\boxed{-6})}}{2 \times \boxed{1}} = \frac{-3 \pm \sqrt{33}}{2}$$

121 일차항의 계수가 짝수일 때의 근의 공식에

$a=\boxed{1}, b'=\boxed{-3}, c=\boxed{-5}$ 를 대입하면

$$x = \frac{-\boxed{(-3)} \pm \sqrt{\boxed{(-3)}^2 - \boxed{1} \times (\boxed{-5})}}{\boxed{1}} = \boxed{3 \pm \sqrt{14}}$$

122 1, -3, $1/\frac{3\pm\sqrt{5}}{2}$

123 $x=\frac{1\pm\sqrt{17}}{2}$

124 $x=\frac{-3\pm\sqrt{39}}{2}$

125 $x=\frac{-9\pm\sqrt{73}}{2}$

126 $x=\frac{-5\pm\sqrt{33}}{2}$

127 $x = \frac{7 \pm \sqrt{17}}{8}$ 128 $x = \frac{1 \pm \sqrt{61}}{10}$ 129 $x = \frac{1 \pm \sqrt{33}}{2}$
 130 $x = \frac{3 \pm \sqrt{29}}{2}$ 131 1, 2, 2 / $-2 \pm \sqrt{2}$
 132 $x = 3 \pm \sqrt{10}$ 133 $x = -7 \pm 2\sqrt{13}$ 134 $x = \frac{4 \pm \sqrt{26}}{5}$
 135 $x = \frac{-5 \pm \sqrt{31}}{2}$ 136 $x = 7 \pm \sqrt{41}$ 137 $x = \frac{-2 \pm \sqrt{2}}{3}$
 138 74 139 $x^2 - x - 2, 1, 2, -1, 2$
 140 $x = -\frac{5}{2}$ 또는 $x = 1$ 141 $x = -3$ 또는 $x = 6$
 142 $x = -\frac{5}{7}$ 또는 $x = \frac{5}{7}$ 143 $x = \frac{3 \pm 2\sqrt{11}}{5}$
 144 $x^2 - 6x + 3, 3 \pm \sqrt{6}$ 145 $x = 2$ 또는 $x = 4$
 146 $x = -\frac{1}{3}$ 또는 $x = 1$ 147 $x = -2$ 또는 $x = -\frac{1}{2}$
 148 $x = \frac{2 \pm \sqrt{10}}{3}$ 149 $x = \frac{6 \pm \sqrt{42}}{2}$
 150 $x = -\frac{1}{2}$ 또는 $x = \frac{5}{6}$ 151 $x = \frac{3 \pm \sqrt{17}}{2}$
 152 $x = \frac{2 \pm \sqrt{34}}{2}$ 153 $x = \frac{1 \pm \sqrt{17}}{2}$
 154 $x = 4$ 또는 $x = 6$ 155 32
 156 $A^2 - 4A - 5, 1, 5, -1, 5, -1, 5, -3, 3$
 157 $x = 0$ 158 $x = \frac{11}{3}$ 159 $x = 4$ 또는 $x = 7$
 160 $x = -2$ 또는 $x = \frac{3}{2}$ 161 $x = -\frac{1}{4}$ 또는 $x = \frac{3}{4}$
 162 2, 3, $x^2 - 5x + 6$ 163 $x^2 - 4x + 3 = 0$
 164 $-x^2 - 3x + 18 = 0$ 165 $-2x^2 - 2x + 4 = 0$
 166 $3x^2 + 15x + 12 = 0$ 167 $4x^2 + 8x - 5 = 0$
 168 3, $x^2 - 6x + 9$ 169 $x^2 - 8x + 16 = 0$
 170 $3x^2 + 18x + 27 = 0$ 171 $-x^2 - 8x - 16 = 0$
 172 $-3x^2 + 9x - \frac{27}{4} = 0$ 173 $a = -6, b = -20$
 174 1, -4, 1, 12, >, 2 175 0 176 2 177 2
 178 0 179 1 180 0 181 2 182 $k < \frac{25}{4}$
 183 $k = \frac{25}{4}$ 184 $k > \frac{25}{4}$ 185 $k > -\frac{1}{3}$
 186 $k = -\frac{1}{3}$ 187 $k < -\frac{1}{3}$ 188 $k \leq \frac{7}{4}$
 189 $(x+1)^2, 9x+1 / (x+1)^2 = 9x+1$
 190 $x = 0$ 또는 $x = 7$ 191 7 192 $3x / x^2 + (3x)^2 = 90$
 193 $x = -3$ 또는 $x = 3$ 194 39
 195 $x + 2 / x(x+2) = 288$ 196 $x = -18$ 또는 $x = 16$
 197 16, 18
 198 $x - 1, x + 1 / (x-1)^2 + x^2 = 10(x+1) + 5$
 199 $x = -1$ 또는 $x = 7$ 200 6, 7, 8
 201 $x + 5 / x^2 = 3(x+5) + 3$ 202 $x = -3$ 또는 $x = 6$
 203 6살 204 $x - 5 / x(x-5) = 84$
 205 $x = -7$ 또는 $x = 12$ 206 12명 207 $40x - 5x^2 = 75$
 208 $x = 3$ 또는 $x = 5$ 209 3초 후 210 2초 후
 211 7초 후 212 $x + 3 / x(x+3) = 108$
 213 $x = -12$ 또는 $x = 9$ 214 9 cm 215 8 cm
 216 6 cm 217 $8 + x, 9 - x / (8+x)(9-x) = 70$
 218 $x = -1$ 또는 $x = 2$ 219 10 cm 220 6

107~108쪽 기본 문제 × 확인하기

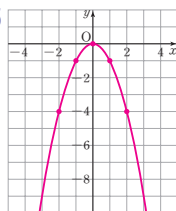
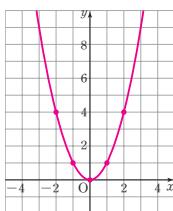
- 1 (1) ○ (2) × (3) ○ (4) ×
 2 (1) $x = 0$ 또는 $x = -1$ (2) $x = 4$ 또는 $x = \frac{1}{3}$
 (3) $x = 1$ 또는 $x = -\frac{4}{3}$
 3 (1) $x = 0$ 또는 $x = -3$ (2) $x = 3$ 또는 $x = 8$
 (3) $x = -\frac{4}{3}$ 또는 $x = 1$ (4) $x = -\frac{5}{2}$ (5) $x = -3$ (6) $x = \frac{1}{2}$
 4 (1) 9 (2) -8, 8 (3) 27
 5 (1) $x = \pm 4\sqrt{3}$ (2) $x = \pm \frac{3}{4}$ (3) $x = \frac{1 \pm \sqrt{5}}{3}$ (4) $x = -3 \pm 3\sqrt{3}$
 6 (1) $x = -1 \pm \sqrt{6}$ (2) $x = 2 \pm \sqrt{5}$ (3) $x = 2 \pm \frac{\sqrt{10}}{2}$
 (4) $x = \frac{-7 \pm \sqrt{13}}{6}$
 7 (1) $x = \frac{-1 \pm \sqrt{29}}{2}$ (2) $x = 2 \pm \sqrt{6}$ (3) $x = \frac{-9 \pm \sqrt{33}}{6}$
 (4) $x = 3 \pm \sqrt{26}$
 8 (1) $x = -9$ 또는 $x = 5$ (2) $x = \frac{3 \pm 2\sqrt{21}}{5}$ (3) $x = \frac{-2 \pm 2\sqrt{11}}{5}$
 9 (1) $x^2 - 10x + 21 = 0$ (2) $8x^2 - 2x - 1 = 0$
 (3) $2x^2 + 20x + 50 = 0$ (4) $-9x^2 + 6x - 1 = 0$
 10 (1) 2 (2) 1 (3) 0
 11 (1) $k < \frac{9}{4}$ (2) $k = \frac{9}{4}$ (3) $k > \frac{9}{4}$
 12 (1) $x^2 = 3x + 10$ (2) 5
 13 (1) $x^2 + (x+1)^2 = 145$ (2) 8, 9
 14 (1) $20x - 5x^2 = 20$ (2) 2초 후
 15 (1) $(8+x)(4+x) = 60$ (2) 2

109~111쪽 학교 시험 문제 × 확인하기

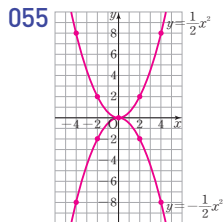
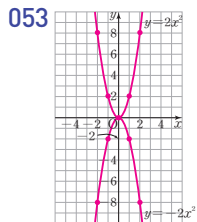
- 1 ③ 2 ③ 3 -7 4 4 5 ② 6 $\frac{11}{2}$
 7 ④ 8 ①, ④ 9 ③ 10 ③ 11 ④ 12 ②
 13 $x = -2$ 또는 $x = -1$ 14 ④ 15 ① 16 -2, 6
 17 9, 11, 13 18 ② 19 ② 20 5 cm 21 13초 후

6 / 이차함수와 그 그래프(1)

- 114~127쪽 001 × 002 ○ 003 ○ 004 ×
 005 ○ 006 × 007 $y = 4x - 20, \times$
 008 $y = \pi x^2 + 2\pi x + \pi, \circ$ 009 $y = 60x, \times$
 010 $y = x^2 + x, \circ$ 011 $y = x^3, \times$ 012 $a \neq 0$ 013 $a \neq 2$
 014 $a \neq 3$ 015 2 016 -1 017 -2 018 $\frac{1}{4}$ 019 13
 020 1 021 1 022 -11 023 $-\frac{5}{4}$ 024 -9
 025 2, 2, 5 026 -3 027 6 028 4
 029 0, 4, 2, -4, 2, 2 030 1 031 13
 032 4, 1, 0, 1, 4 034 -4, -1, 0, -1, -4
 033



- 036 0 037 아래 038 y 039 증가 040 감소 041 x
 042 1, 2 043 16 044 0 045 위 046 y 047 증가
 048 증가 049 x^2 050 3, 4 051 -49
 052 8, 2, 0, 2, 8 /
 -8, -2, 0, -2, -8



- 056 아래, y 057 0, 0, $x=0$ 058 1, 2 059 감소
 060 $-5x^2$ 061 20 062 위, y 063 0, 0, $x=0$
 064 3, 4 065 감소 066 $\frac{1}{4}x^2$ 067 -9 068 ㄱ, ㄷ, ㅅ
 069 ㄴ, ㄹ, ㅁ, ㅂ, ㅈ 070 ㅅ 071 ㄱ
 072 ㄷ과 ㄹ 073 ㄴ, ㄹ, ㅁ, ㅂ, ㅈ 074 12
 075 $\sqrt{2}$ 076 1 077 $-\frac{2}{3}$ 078 $\frac{4}{3}$ 079 2 080 -15
 081 3 082 $-\frac{3}{5}, -9$ 083 5, $-\frac{7}{4}$

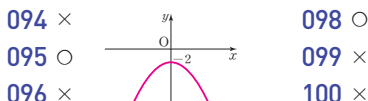
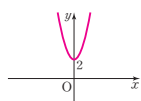
084 $y=4x^2+5$ 085 $y=2x^2-1$ 086 $y=-\frac{2}{3}x^2+\frac{1}{6}$

087 $x=0, (0, 5)$ 088 $x=0, (0, -4)$

089 $x=0, (0, -\frac{2}{3})$ 090 $x=0, (0, 1)$

091 $x=0, (0, \frac{1}{5})$ 092 $x=0, (0, -2)$

[093~096] 093 ○ [097~100] 097 ×



094 × 095 ○ 096 × 098 ○ 099 × 100 ×

101 $y=\frac{4}{3}x^2-3$ 102 $x=0$ 103 아래 104 감소 105 4

106 -5 107 3 108 -11 109 2 110 $3, \frac{4}{5}$

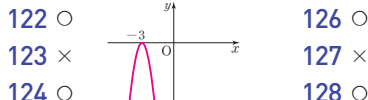
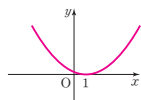
111 $-\frac{2}{9}, -\frac{2}{5}$ 112 $y=4(x-5)^2$ 113 $y=2(x+3)^2$

114 $y=-\frac{2}{3}(x-\frac{1}{6})^2$ 115 $x=2, (2, 0)$

116 $x=-7, (-7, 0)$ 117 $x=\frac{4}{3}, (\frac{4}{3}, 0)$

118 $x=-1, (-1, 0)$ 119 $x=\frac{1}{3}, (\frac{1}{3}, 0)$

120 $x=-\frac{1}{2}, (-\frac{1}{2}, 0)$ [121~124] 121 × [125~128] 125 ×



122 ○ 123 × 124 ○ 126 ○ 127 × 128 ○

129 $y=-2(x+2)^2$ 130 -2, 0 131 $x=-2$

132 3, 4 133 감소 134 $\frac{1}{2}$ 135 12

136 -1, 3 137 2 138 3, 5 139 3, 1, -3

140 $-\frac{1}{5}, -\frac{1}{2}, -\frac{2}{3}$ 141 $y=4(x-8)^2+3$

142 $y=2(x+5)^2+1$ 143 $y=-3(x+1)^2-2$

144 $x=2, (2, 7)$ 145 $x=-1, (-1, 3)$

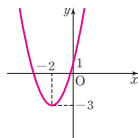
146 $x=5, (5, -2)$

147 $x=-\frac{1}{2}, (-\frac{1}{2}, -4)$

148 $x=4, (4, -\frac{5}{6})$

149 $x=-\frac{1}{3}, (-\frac{1}{3}, 5)$

[150~153]



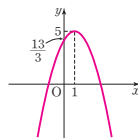
150 ○

151 ○

152 ○

153 ×

[154~157]



154 ×

155 ×

156 ×

157 ○

158 $y=2(x-2)^2+1$

159 아래 160 1, 2 161 3

162 4 163 1 164 -21 165 12

	그래프의 모양 → a 의 부호	꼭짓점 (p, q)의 위치 → p, q 의 부호
166	아래로 볼록 $a > 0$	제3사분면 → $(-, -)$ $p < 0, q < 0$
167	위로 볼록 $a < 0$	제1사분면 → $(+, +)$ $p > 0, q > 0$
168	아래로 볼록 $a > 0$	제4사분면 → $(+, -)$ $p > 0, q < 0$
169	위로 볼록 $a < 0$	제2사분면 → $(-, +)$ $p < 0, q > 0$

128~129쪽 기본 문제 × 확인하기

1 (1) ○ (2) × (3) ○ (4) ○ (5) ×

2 (1) $y=3x$, × (2) $y=1500x-500$, × (3) $y=\frac{1}{2}x^2+\frac{5}{2}x$, ○

3 (1) $a \neq 0$ (2) $a \neq 3$ (3) $a \neq 2$

4 (1) 0 (2) 4 (3) $\frac{44}{9}$ (4) 0 (5) 20

5 (1) ㄴ, ㄹ, ㅁ, ㅂ (2) ㄹ (3) ㄱ과 ㅁ (4) ㄱ, ㄷ, ㄹ

6 (1) $y=5x^2-3, x=0, (0, -3)$ (2) $y=\frac{2}{3}x^2+5, x=0, (0, 5)$

(3) $y=-7x^2-\frac{5}{3}, x=0, (0, -\frac{5}{3})$

7 (1) $y=6(x+8)^2, x=-8, (-8, 0)$

(2) $y=-2(x+\frac{1}{5})^2, x=-\frac{1}{5}, (-\frac{1}{5}, 0)$

(3) $y=\frac{2}{3}(x-7)^2, x=7, (7, 0)$

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

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

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

9 (1) $>, <, >$ (2) $<, >, =$ (3) $>, >, <$

130~131쪽 학교 시험 문제 × 확인하기

1 ② 2 1 3 ⑤ 4 ㄴ, ㄷ, ㅁ 5 ③

6 ③ 7 ① 8 ① 9 ③ 10 4 11 ⑤

12 ③

7 / 이차함수와 그 그래프(2)

134~144쪽

001 1, 1, 1, 7

002 4, 4, 4, 8, 2, 19

003 $y = (x-3)^2 - 9$

004 $y = (x+4)^2 - 7$

005 $y = -\left(x + \frac{1}{2}\right)^2 - \frac{7}{4}$

006 $y = 3(x+1)^2 - 8$

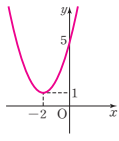
007 $y = -\frac{1}{4}(x-8)^2 - 1$

008

(1) $(-2, 1)$

(2) $(0, 5)$

(3) 아래로 볼록

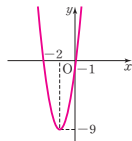


009

(1) $(-2, -9)$

(2) $(0, -1)$

(3) 아래로 볼록

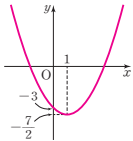


010

(1) $\left(1, -\frac{7}{2}\right)$

(2) $(0, -3)$

(3) 아래로 볼록

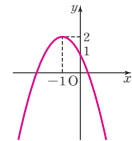


011

(1) $(-1, 2)$

(2) $(0, 1)$

(3) 위로 볼록

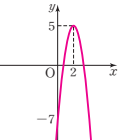


012

(1) $(2, 5)$

(2) $(0, -7)$

(3) 위로 볼록



013 0, 0, 4, -2, 2, -2, 0, 2, 0

014 $(-3, 0), (2, 0)$

015 $\left(-\frac{5}{2}, 0\right), \left(\frac{5}{2}, 0\right)$

016 $(-4, 0), (-3, 0)$

017 $\left(-\frac{1}{2}, 0\right), (2, 0)$

018 -4 019 $\times$ 020 $\times$

021 $\circ$ 022 $\circ$ 023 $\times$ 024 $\circ$ 025 $\times$ 026 $\circ$

027 $\circ$ 028 $\circ$ 029 $\times$ 030 $\circ$ 031 $\circ$ 032 $\times$

033 $\circ$ 034 $\times$

	a의 부호	b의 부호	c의 부호
035	$a > 0$	축이 y축의 오른쪽 $\Rightarrow b < 0$	y축과 만나는 점이 x축보다 위쪽 $\Rightarrow c > 0$
036	$a > 0$	$b > 0$	$c < 0$
037	$a < 0$	$b < 0$	$c < 0$
038	$a < 0$	$b > 0$	$c > 0$

039 ① 1, 6 ② $4, y = 4(x-1)^2 + 6$

040 $y = \frac{1}{3}(x+2)^2 + 5$ 041 $y = -(x-4)^2 + 6$

042 $y = -3(x+6)^2$ 043 3, -5, 0, 4 / $y = (x-3)^2 - 5$

044 $y = \frac{4}{9}(x+2)^2 - 4$ 045 $y = -\frac{1}{2}x^2 + 7$ 046 -80

047 ① 1 ② $4a+q, a+q, -1, 11, y = -(x-1)^2 + 11$

048 $y = \frac{1}{3}(x-3)^2 + \frac{2}{3}$ 049 $y = \frac{1}{2}(x+1)^2 + \frac{11}{2}$

050 $y = 3x^2 + 3$ 051 -4, 5, -2, -1 / $y = \frac{1}{2}(x+4)^2 - 3$

052 $y = (x-2)^2 - 1$ 053 $y = -\frac{3}{4}(x+2)^2 + \frac{19}{4}$

054 ② 4, 4, 1, 2, $\frac{3}{2}, -\frac{1}{2}, y = \frac{3}{2}x^2 - \frac{1}{2}x + 4$

055 $y = 2x^2 - x + 1$ 056 $y = x^2 + 2x - 8$ 057 $y = 2x^2 - 4x + 5$

058 3, 4, -2 / $y = \frac{1}{2}x^2 - \frac{3}{2}x - 2$ 059 $y = \frac{1}{2}x^2 + x - 3$

060 $y = -\frac{5}{3}x^2 - \frac{20}{3}x - 4$ 061 없다., -7

062 없다., -4 063 1, 없다. 064 4, 없다.

065 1, 4, 없다 066 -3, -1, 없다

067 $x=5$ 일 때 최솟값은 0이고, 최댓값은 없다.

068 $x=-2$ 일 때 최솟값은 -5이고, 최댓값은 없다.

069 $x=\frac{1}{2}$ 일 때 최댓값은 3이고, 최솟값은 없다.

070 3, 2, 3, -2, 없다

071 $x=0$ 일 때 최솟값은 -1이고, 최댓값은 없다.

072 $x=1$ 일 때 최솟값은 3이고, 최댓값은 없다.

073 $x=4$ 일 때 최댓값은 32이고, 최솟값은 없다.

074 $x=-2$ 일 때, 최댓값은 3이고, 최솟값은 없다.

075 8 076 3, 9, -3-9, -9, 12 077 -3 078 17

079 -5 080 -3 081 (1) 2, 20, 2, 20, 20 (2) 2초 후

082 (1) 46 m (2) 3초 후 083 32 m 084 8 m

085 1초 후 086 $y = -x^2 + 20x$ 087 100

088 10, 10 089 $y = x^2 + 18x$ 090 -81

091 -9, 9 092 $(20-x)$ cm, $(6+x)$ cm

093 $y = -x^2 + 14x + 120$ 094 169 cm^2

095 가로 길이: 13 cm, 세로 길이: 13 cm

096 81 cm^2

145쪽

기본 문제 $\times$ 확인하기

1 (1) $y = (x+3)^2 - 16$ (2) $y = -2(x-1)^2 + 2$

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

2 (1) $>, <, <$ (2) $<, <, =$

3 (1) $y = -3x^2 + 12x - 12$ (2) $y = -3x^2 - 6x + 2$

(3) $y = x^2 + 4x + 2$ (4) $y = -9x^2 + 6x + 11$

(5) $y = 7x^2 - 6x + 1$ (6) $y = -x^2 - 7x - 1$

4 (1) 최댓값은 없고, $x=0$ 일 때 최솟값은 0이다.

(2) $x=0$ 일 때 최댓값은 $-\frac{2}{3}$ 이고, 최솟값은 없다.

(3) 최댓값은 없고, $x=1$ 일 때 최솟값은 4이다.

(4) 최댓값은 없고, $x=3$ 일 때 최솟값은 -4이다.

(5) $x=2$ 일 때 최댓값은 -1이고, 최솟값은 없다.

5 (1) 3 (2) 6 (3) 2 (4) 4

146~147쪽

학교 시험 문제 $\times$ 확인하기

1 ⑤ 2 ④ 3 ② 4 $-\frac{1}{2}$ 5 ② 6 ⑤

7 $y = -\frac{1}{4}x^2 - \frac{3}{2}x + 4$ 8 ④ 9 ① 10 180 m