

01 8쪽 삼각비

- A 단계** 0001 $\sin A = \frac{5}{13}, \cos A = \frac{12}{13}, \tan A = \frac{5}{12}$
 0002 $\sin B = \frac{12}{13}, \cos B = \frac{5}{13}, \tan B = \frac{12}{5}$ 0003 $2\sqrt{5}$
 0004 $\sin C = \frac{\sqrt{5}}{5}, \cos C = \frac{2\sqrt{5}}{5}, \tan C = \frac{1}{2}$ 0005 6 0006 $3\sqrt{5}$
 0007 $\angle C$ 0008 $\sin x = \frac{4}{5}, \cos x = \frac{3}{5}, \tan x = \frac{4}{3}$ 0009 $\frac{5\sqrt{3}}{6}$
 0010 0 0011 1 0012 $\sqrt{2}$ 0013 $\sqrt{3}$ 0014 60° 0015 45°
 0016 30° 0017 $x=4, y=4\sqrt{3}$ 0018 $x=2\sqrt{2}, y=4$ 0019 0.5736
 0020 0.8192 0021 0.7002 0022 0.8192
 0023 0.5736

0024

삼각비 \ A	0°	30°	45°	60°	90°
$\sin A$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
$\cos A$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
$\tan A$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	\times

- 0025 2 0026 0 0027 1 0028 0 0029 < 0030 >
 0031 < 0032 < 0033 > 0034 < 0035 < 0036 22
 0037 25 0038 24

- B 단계** 0039 ④ 0040 $\frac{\sqrt{2}}{3}$ 0041 ④ 0042 $\frac{\sqrt{6}}{3}$ 0043 ①
 0044 $\frac{4}{5}$ 0045 ④ 0046 54 0047 ③ 0048 $\frac{\sqrt{2}}{3}$ 0049 $\frac{8}{15}$
 0050 $\frac{2\sqrt{5}}{5}$ 0051 ④ 0052 ③ 0053 $\frac{\sqrt{11}}{6}$ 0054 ⑤ 0055 ②
 0056 $\frac{15}{8}$ 0057 $\frac{7}{5}$ 0058 $\frac{24}{25}$ 0059 ② 0060 $\frac{1}{5}$ 0061 $\frac{\sqrt{39}}{5}$
 0062 ③ 0063 ⑤ 0064 $\frac{7}{9}$ 0065 $\frac{3\sqrt{7}}{16}$ 0066 ② 0067 $\frac{5\sqrt{29}}{29}$
 0068 ⑤ 0069 ② 0070 $\frac{\sqrt{6}}{3}$ 0071 ④ 0072 $\frac{2\sqrt{3}}{3}$ 0073 ③
 0074 $\frac{\sqrt{6}}{3}$ 0075 ③ 0076 ③ 0077 ②, ⑤ 0078 1 0079 -4
 0080 ② 0081 ③ 0082 ③ 0083 30° 0084 1 0085 10°
 0086 ③ 0087 $8\sqrt{6}$ 0088 $5\sqrt{7}$ cm 0089 ② 0090 ②
 0091 $\frac{16\sqrt{3}}{3}$ cm² 0092 $2\sqrt{3}$ 0093 ① 0094 ② 0095 $2+\sqrt{3}$
 0096 $\sqrt{2}+1$ 0097 ⑤ 0098 $y=x-3$ 0099 $\frac{\sqrt{3}}{2}$ 0100 ④
 0101 ⑤ 0102 ④ 0103 ⑤ 0104 (·), (·) 0105 ③ 0106 $\frac{1}{4}$
 0107 ③ 0108 ⑤ 0109 $\frac{1}{2}$ 0110 ④ 0111 ⑤ 0112 ③
 0113 ② 0114 $\sin 23^\circ, \cos 0^\circ, \tan 50^\circ, \tan 75^\circ$ 0115 ①
 0116 ④ 0117 ⑤ 0118 30° 0119 ④ 0120 1.345 0121 ④
 0122 24° 0123 4.695 0124 36.325 0125 ①

- C 단계** 0126 ⑤ 0127 $\frac{5\sqrt{3}}{9}$ 0128 ② 0129 $\frac{8\sqrt{5}}{5}$ 0130 ⑤
 0131 $\frac{\sqrt{2}}{2}$ 0132 1 0133 $75(\sqrt{3}-1)$ 0134 ③ 0135 ③

- 0136 $\frac{\sqrt{6}-\sqrt{2}}{4}$ 0137 $\frac{3+2\sqrt{3}}{6}$ 0138 ⑤ 0139 $\frac{15}{17}$
 0140 42° 0141 (1) $-2+2\sqrt{5}$ (2) $\frac{1+\sqrt{5}}{4}$ 0142 $\frac{5}{13}$
 0143 $y = \frac{3}{4}x + \frac{7}{2}$ 0144 $\frac{\sqrt{2}}{3}$ 0145 $-\frac{\sqrt{3}}{12}$
 0146 $\frac{9\sqrt{3}}{2}$ cm² 0147 $36\sqrt{3}$ 0148 $\frac{\sqrt{2}+\sqrt{6}}{4}$ 0149 $-\sqrt{3}$

02 32쪽 삼각비의 활용

- A 단계** 0150 (1) 10, $5\sqrt{3}$ (2) 10, 5 0151 (1) 4, 4 (2) 4, $4\sqrt{2}$
 0152 3.84 0153 5.74 0154 20 0155 (1) $2\sqrt{3}$ (2) 2 (3) 4 (4) $2\sqrt{7}$
 0156 $\sqrt{10}$ 0157 2 0158 (1) 12 (2) 60° (3) $8\sqrt{3}$ 0159 $6\sqrt{2}$
 0160 $4\sqrt{6}$
 0161 (1) $\angle BAH=60^\circ, \angle CAH=45^\circ$ (2) $\overline{BH}=\sqrt{3}h, \overline{CH}=h$ (3) $5(\sqrt{3}-1)$
 0162 (1) $\angle BAH=60^\circ, \angle CAH=30^\circ$ (2) $\overline{BH}=\sqrt{3}h, \overline{CH}=\frac{\sqrt{3}}{3}h$ (3) $\sqrt{3}$
 0163 14 cm² 0164 $15\sqrt{2}$ cm²
 0165 (가) $\frac{1}{2}ab \sin(180^\circ-x)$ (나) $ab \sin(180^\circ-x)$ 0166 $21\sqrt{2}$ cm²
 0167 $55\sqrt{3}$ cm² 0168 (가) $\frac{1}{2}$ (나) $\frac{1}{2}ab$ 0169 $33\sqrt{3}$ cm²
 0170 16 cm²

- B 단계** 0171 ③, ④ 0172 7.11 0173 ③ 0174 (1) 4.32 (2) 5.76
 0175 $2(\sqrt{6}-\sqrt{2})$ 0176 $45\sqrt{3}$ cm³ 0177 ⑤ 0178 ①
 0179 $72\sqrt{3}\pi$ cm³ 0180 4 cm³ 0181 (1) $6\sqrt{6}$ cm (2) $288\sqrt{6}$ cm³
 0182 30.2 m 0183 67.5 m 0184 ③ 0185 ③
 0186 ④ 0187 $50\sqrt{3}$ m 0188 35초 0189 $2\sqrt{7}$ cm
 0190 $5\sqrt{3}$ cm 0191 ④ 0192 ⑤ 0193 $\sqrt{91}$ 0194 ⑤
 0195 $2\sqrt{6}$ cm 0196 14 cm 0197 ④ 0198 $5\sqrt{6}$ m
 0199 $40(\sqrt{2}+\sqrt{6})$ m 0200 $6(3-\sqrt{3})$ cm 0201 ③ 0202 10 m
 0203 ② 0204 $16(3-\sqrt{3})$ cm² 0205 ② 0206 $3\sqrt{3}$ 0207 $3-\sqrt{3}$
 0208 7 cm 0209 ⑤ 0210 $9(3+\sqrt{3})$ cm² 0211 ② 0212 $6\sqrt{3}$
 0213 ③ 0214 ③ 0215 $6\sqrt{2}$ cm² 0216 36 cm²
 0217 ② 0218 ① 0219 $4\sqrt{3}$ cm² 0220 ① 0221 ④
 0222 ② 0223 $4\pi-3\sqrt{3}$ 0224 $32\sqrt{2}$ cm²
 0225 $12\sqrt{3}$ cm² 0226 ② 0227 $18+12\sqrt{2}$ 0228 ④
 0229 ③ 0230 ② 0231 $40+3\sqrt{51}$ 0232 $32\sqrt{2}$ cm²
 0233 $4\sqrt{3}$ cm 0234 135° 0235 ③ 0236 ④ 0237 $15\sqrt{3}$
 0238 60 cm² 0239 ② 0240 ⑤ 0241 45° 0242 ④

- C 단계** 0243 ④ 0244 ⑤ 0245 $50\sqrt{2}$ m 0246 $6\sqrt{13}$
 0247 ② 0248 $4\sqrt{3}+4$ 0249 ④ 0250 7 cm
 0251 $(48+16\sqrt{3})$ cm² 0252 $\frac{3}{5}$ 0253 $18\sqrt{3}$ cm² 0254 ④
 0255 (1) 20 cm (2) 4 cm 0256 $3\sqrt{3}(2-\sqrt{3})$ 0257 $36\sqrt{3}$
 0258 $\frac{99\sqrt{3}}{2}$ cm² 0259 $4\sqrt{3}$ cm² 0260 $99\sqrt{3}$

03 52쪽 원과 직선

A 단계 0261 8 0262 22 0263 18 cm 0264 14 cm
 0265 (1) $\sqrt{65}$ cm (2) $2\sqrt{65}$ cm 0266 16 0267 $10\sqrt{2}$ 0268 $4\sqrt{14}$
 0269 3 0270 7 0271 2 0272 6 0273 7 0274 24
 0275 $2\sqrt{5}$ 0276 15 0277 $4\sqrt{2}$ 0278 (㉠), (㉡), (㉢), (㉣) 0279 6
 0280 $5\sqrt{3}$ 0281 60° 0282 70° 0283 16 0284 7
 0285 (㉠) $8-x$ (㉡) \overline{CF} (㉢) 3
 0286 (1) 13 (2) $\overline{AF}=5-r$, $\overline{CF}=12-r$ (3) 2 0287 10 0288 5

B 단계 0289 ④ 0290 10 cm 0291 48 cm² 0292 ③
 0293 $2\sqrt{21}$ cm² 0294 ④ 0295 ③ 0296 $\frac{15}{2}$ cm
 0297 ② 0298 $12\sqrt{2}$ cm 0299 ⑤ 0300 65π 0301 10 cm
 0302 ① 0303 25π cm² 0304 ② 0305 $8\sqrt{3}$ cm
 0306 ④ 0307 $25\sqrt{3}$ cm² 0308 $\frac{32}{3}\pi$ cm 0309 ④
 0310 12 0311 ③ 0312 $4\sqrt{5}$ cm 0313 $9\sqrt{3}+4\pi$
 0314 ④ 0315 80° 0316 ③ 0317 ③ 0318 12π cm²
 0319 $2\sqrt{2}+2$ 0320 9 cm 0321 ② 0322 25π cm²
 0323 15 cm 0324 8 cm 0325 $6\sqrt{3}$ cm 0326 12 cm 0327 ④
 0328 ③ 0329 26° 0330 ③ 0331 ⑤ 0332 $4\sqrt{2}$ cm²
 0333 ④ 0334 40° 0335 $12\sqrt{3}$ cm 0336 ③ 0337 ③
 0338 $4\sqrt{5}$ cm 0339 $(72+16\sqrt{3}\pi)$ cm 0340 5 cm 0341 ②
 0342 12 cm 0343 ③ 0344 ② 0345 $8\sqrt{3}$ cm 0346 ⑤
 0347 12 cm 0348 90° 0349 ② 0350 $32\sqrt{15}$ cm² 0351 ②
 0352 $11\sqrt{6}$ cm² 0353 ③ 0354 16 0355 ③ 0356 7 cm
 0357 ④ 0358 $3\sqrt{5}$ cm 0359 4π cm² 0360 ⑤
 0361 ③ 0362 16 cm 0363 28 cm 0364 ④ 0365 $2\sqrt{10}$ cm
 0366 $(68-16\pi)$ cm² 0367 ③ 0368 ④ 0369 36 cm 0370 3 cm
 0371 ② 0372 2 cm

C 단계 0373 ③ 0374 $(6+3\sqrt{3})$ cm² 0375 ① 0376 2
 0377 $9\sqrt{3}$ cm² 0378 ② 0379 $\frac{16\sqrt{5}}{3}$ cm 0380 ⑤
 0381 $\frac{3}{2}$ cm 0382 ② 0383 $\frac{8\sqrt{5}}{5}$ cm 0384 7 cm 0385 ⑤
 0386 8 0387 ③ 0388 $12\pi-9\sqrt{3}$ 0389 $\frac{15}{2}$ cm
 0390 50° 0391 $(16\sqrt{3}-\frac{16}{3}\pi)$ cm² 0392 6 cm 0393 $\sqrt{6}+\sqrt{3}-1$
 0394 3 0395 4 0396 $(16-8\sqrt{3})$ cm

04 74쪽 원주각

A 단계 0397 (㉠) $\angle PAO$ (㉡) $\angle BPO$ (㉢) $\angle AOB$ 0398 30°
 0399 120° 0400 108° 0401 230° 0402 47° 0403 60° 0404 33°
 0405 56° 0406 $\angle x=55^\circ$, $\angle y=42^\circ$ 0407 $\angle x=27^\circ$, $\angle y=54^\circ$
 0408 51° 0409 46° 0410 35 0411 7 0412 60 0413 25

B 단계 0414 ① 0415 48° 0416 112° 0417 ③ 0418 ②
 0419 28° 0420 24° 0421 ④ 0422 64° 0423 ④ 0424 ③
 0425 120° 0426 $(2+2\sqrt{3})$ cm 0427 72° 0428 ③ 0429 117°
 0430 ③ 0431 70° 0432 ② 0433 55° 0434 ④ 0435 180°
 0436 ① 0437 92° 0438 ③ 0439 ④ 0440 75° 0441 ④
 0442 $\sqrt{61}$ 0443 ③ 0444 $3\sqrt{2}$ cm 0445 $\frac{\sqrt{5}}{3}$ 0446 $\frac{43}{20}$
 0447 ④ 0448 $\frac{2\sqrt{3}}{7}$ 0449 ② 0450 $12+4\sqrt{3}$ 0451 ③
 0452 ① 0453 ⑤ 0454 30° 0455 ③ 0456 ④ 0457 36°
 0458 ③ 0459 55° 0460 ① 0461 60° 0462 ③ 0463 ④
 0464 40° 0465 7π 0466 24 cm 0467 ③ 0468 ④ 0469 20
 0470 ⑤ 0471 ② 0472 100° 0473 ②
C 단계 0474 2π 0475 ④ 0476 59° 0477 ⑤ 0478 ②
 0479 $(25\sqrt{3}+\frac{250}{3}\pi)$ m² 0480 ③ 0481 80° 0482 ④ 0483 100°
 0484 9 0485 ⑤ 0486 $14\sqrt{3}$ 0487 $\frac{\pi}{2}-1$ 0488 $\frac{\sqrt{3}}{2}$ 0489 $2\sqrt{3}$ cm
 0490 $18\sqrt{3}$ cm² 0491 5π cm

05 90쪽 원주각의 활용

A 단계 0492 38° 0493 20° 0494 77° 0495 25°
 0496 (㉠) 180 (㉡) 180 (㉢) $\angle DCE$ 0497 $\angle x=97^\circ$, $\angle y=73^\circ$
 0498 $\angle x=80^\circ$, $\angle y=100^\circ$ 0499 93° 0500 67° 0501 65°
 0502 70° 0503 55° 0504 68° 0505 72° 0506 105° 0507 48°
 0508 68°
B 단계 0509 ②, ⑤ 0510 35° 0511 45° 0512 ③ 0513 ⑤
 0514 14 cm 0515 50° 0516 ③ 0517 ③ 0518 ② 0519 142°
 0520 ④ 0521 ① 0522 115° 0523 ③ 0524 ④ 0525 70°
 0526 ③ 0527 96° 0528 10° 0529 16π cm² 0530 95°
 0531 ⑤ 0532 ④ 0533 216° 0534 360° 0535 59° 0536 20°
 0537 ④ 0538 ④ 0539 ② 0540 ②, ④ 0541 186° 0542 16°
 0543 ②, ④ 0544 ② 0545 100°
 0546 (㉠) $\angle APB$ (㉡) $\angle CRD$ (㉢) 360 (㉣) 180 0547 ③ 0548 55°
 0549 ④ 0550 ③ 0551 84° 0552 ④ 0553 20° 0554 119°
 0555 ⑤ 0556 88° 0557 ④ 0558 44° 0559 ② 0560 ②
 0561 44° 0562 ④ 0563 ② 0564 60° 0565 8 cm 0566 ①
 0567 ⑤ 0568 $2\sqrt{6}$ cm 0569 ⑤ 0570 ② 0571 63°
 0572 ⑤ 0573 ② 0574 ① 0575 65° 0576 70°
C 단계 0577 ③ 0578 55° 0579 ③ 0580 95° 0581 82°
 0582 65° 0583 ④ 0584 60° 0585 ① 0586 $3\sqrt{5}\pi$ 0587 ④
 0588 ③ 0589 94° 0590 66° 0591 76° 0592 30° 0593 105°
 0594 84°

06 108쪽 대푯값과 산포도

A 단계 0595 평균: $\frac{14}{5}$, 중앙값: 3, 최빈값: 3

0596 평균: $\frac{17}{3}$, 중앙값: 5, 최빈값: 4 0597 평균: 8, 중앙값: 8, 최빈값: 8, 9

0598 B형 0599 중앙값: 27초, 최빈값: 34초 0600 3

0601 중앙값: 4개, 최빈값: 3개, 5개 0602 10장

0603 2장, -2장, 5장, -1장, -4장 0604 -5 0605 27시간 0606 41개

0607 $\frac{576}{7}$ 0608 $\frac{24\sqrt{7}}{7}$ 개

B 단계 0609 18분 0610 2시간 0611 B 바구니 0612 ③

0613 ② 0614 18 0615 8 0616 ① 0617 13.5

0618 71.5 dB 0619 ③ 0620 53 kg 0621 8편 0622 19

0623 ④ 0624 ③ 0625 $b < a < c$ 0626 ⑤

0627 최빈값, 275 mm 0628 평균: 4.1권, 중앙값: 1.5권, 중앙값

0629 (ㄱ), (ㄷ) 0630 ⑤ 0631 ① 0632 25 0633 90

0634 23, 24, 25 0635 15세 0636 ⑤ 0637 -9 0638 ②

0639 ⑤ 0640 78점 0641 47회 0642 ② 0643 ③ 0644 2개

0645 ③ 0646 1점 0647 ⑤ 0648 5 0649 $\sqrt{30}$ 점 0650 ②

0651 ② 0652 102 0653 평균: 8, 분산: 4.6 0654 -6 0655 ③

0656 18 0657 평균: 15, 분산: 9 0658 $\frac{2\sqrt{15}}{5}$ 회 0659 4

0660 ② 0661 평균: 16, 분산: 9 0662 $\sqrt{6}$ 0663 ⑤ 0664 ②, ④

0665 ③ 0666 1반 0667 ① 0668 선환 0669 ② 0670 ②

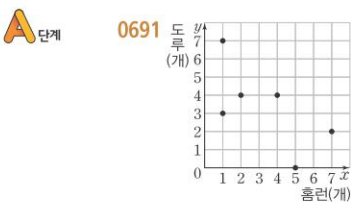
0671 D 반 0672 ① 0673 A 반: $\frac{6}{5}$, B 반: $\frac{8}{5}$, A 반

C 단계 0674 ④ 0675 ⑤ 0676 35 0677 2 0678 ③

0679 412 0680 1 0681 60 0682 ③ 0683 ③ 0684 ⑤

0685 $\frac{2}{3}$ 0686 5 0687 $\frac{31}{3}$ 명 0688 5 0689 $\frac{11}{3}$ 0690 90점, 9

07 124쪽 상관관계

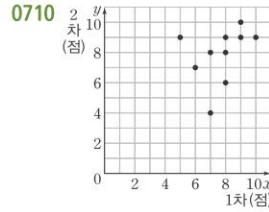


0692 영어: 80점, 국어: 100점 0693 4명 0694 6명 0695 6명

0696 4명 0697 3명 0698 (ㄴ), (ㄷ) 0699 (ㄱ), (ㄷ) 0700 (ㄷ) 0701 양

0702 × 0703 음 0704 음 0705 양 0706 × 0707 음

B 단계 0708 ⑤ 0709 16



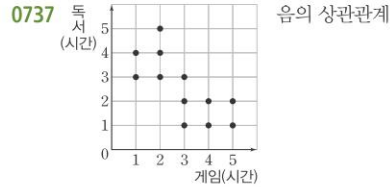
0711 40 % 0712 7점 0713 28 % 0714 ⑤ 0715 ④ 0716 ③, ⑤

0717 8명 0718 4명 0719 (1) 20명 (2) 40 % 0720 ② 0721 ②, ④

0722 ④ 0723 ② 0724 40 % 0725 30 % 0726 180점 0727 ⑤

0728 6회 0729 20 % 0730 ④ 0731 ③, ④ 0732 34 0733 ④

0734 (ㄱ), (ㄷ) 0735 ②, ④ 0736 ④



0738 ③ 0739 ③ 0740 ③ 0741 ⑤ 0742 ⑤ 0743 ②

0744 ③

C 단계 0745 ③ 0746 70 % 0747 3.5회 0748 25 0749 ②

0750 4명 0751 (1) 음의 상관관계 (2) 남학생: 110분, 여학생: 85분

0752 ④ 0753 ③ 0754 8.25점 0755 40 % 0756 65점 0757 34

0758 (1) 상관관계가 없다. (2) 음의 상관관계

