

نام و نام خانوادگی: علی رضا براینی پاسخنامه تشریحی تکلیف شماره ۱۳۰۰ کلاس: ۱۳۰۰ $y = (a-1)x^2 + n + r$ $\frac{-b}{2a} = 2 \Rightarrow -b = 4a \Rightarrow -1 = 4a - 4 \Rightarrow a = \frac{3}{4}$ $y = \frac{3}{4}x^2 + n + r$ $-\frac{1}{4}x^2 + n + r = 0 \Rightarrow -x^2 + 4n + 4r = 0 \Rightarrow x = 2 \checkmark \leftarrow \text{باز، برآورد}$ $x = -2$	۱ (۲)
$f(x) = mx^2 - 2x + n$ $m < 0$ $\Delta > 0 \Rightarrow 20 - 4(m^2) > 0 \Rightarrow 20 > 4m^2$ $m^2 < \frac{20}{4} \Rightarrow \frac{5}{1} > m^2 > \frac{5}{1}$ (II) (I) $\cap$ (II) $\Rightarrow -\frac{5}{1} < m < \frac{5}{1} \checkmark$ $f(x) = -x^2 + 2x - 1$ $f(1) = -1 + 2 - 1 = 0$ $f(2) = -4 + 4 - 1 = -1$ $f(3) = -9 + 6 - 1 = -4$ $f(4) = -16 + 8 - 1 = -9$ $f(5) = -25 + 10 - 1 = -16$ $f(6) = -36 + 12 - 1 = -25$ $f(7) = -49 + 14 - 1 = -36$ $f(8) = -64 + 16 - 1 = -49$ $f(9) = -81 + 18 - 1 = -64$ $f(10) = -100 + 20 - 1 = -81$ $f(11) = -121 + 22 - 1 = -100$ $f(12) = -144 + 24 - 1 = -121$ $f(13) = -169 + 26 - 1 = -144$ $f(14) = -196 + 28 - 1 = -169$ $f(15) = -225 + 30 - 1 = -196$ $f(16) = -256 + 32 - 1 = -225$ $f(17) = -289 + 34 - 1 = -256$ $f(18) = -324 + 36 - 1 = -289$ $f(19) = -361 + 38 - 1 = -324$ $f(20) = -400 + 40 - 1 = -361$ $f(21) = -441 + 42 - 1 = -400$ $f(22) = -484 + 44 - 1 = -441$ $f(23) = -529 + 46 - 1 = -484$ $f(24) = -576 + 48 - 1 = -529$ $f(25) = -625 + 50 - 1 = -576$ $f(26) = -676 + 52 - 1 = -625$ $f(27) = -729 + 54 - 1 = -676$ $f(28) = -784 + 56 - 1 = -729$ $f(29) = -841 + 58 - 1 = -784$ $f(30) = -900 + 60 - 1 = -841$ $f(31) = -961 + 62 - 1 = -900$ $f(32) = -1024 + 64 - 1 = -961$ $f(33) = -1089 + 66 - 1 = -1024$ $f(34) = -1156 + 68 - 1 = -1089$ $f(35) = -1225 + 70 - 1 = -1156$ $f(36) = -1296 + 72 - 1 = -1225$ $f(37) = -1369 + 74 - 1 = -1296$ $f(38) = -1444 + 76 - 1 = -1369$ $f(39) = -1521 + 78 - 1 = -1444$ $f(40) = -1600 + 80 - 1 = -1521$ $f(41) = -1681 + 82 - 1 = -1600$ $f(42) = -1764 + 84 - 1 = -1681$ $f(43) = -1849 + 86 - 1 = -1764$ $f(44) = -1936 + 88 - 1 = -1849$ $f(45) = -2025 + 90 - 1 = -1936$ $f(46) = -2116 + 92 - 1 = -2025$ $f(47) = -2209 + 94 - 1 = -2116$ $f(48) = -2304 + 96 - 1 = -2209$ $f(49) = -2401 + 98 - 1 = -2304$ $f(50) = -2500 + 100 - 1 = -2401$ $f(51) = -2601 + 102 - 1 = -2500$ $f(52) = -2704 + 104 - 1 = -2601$ $f(53) = -2809 + 106 - 1 = -2704$ $f(54) = -2916 + 108 - 1 = -2809$ $f(55) = -3025 + 110 - 1 = -2916$ $f(56) = -3136 + 112 - 1 = -3025$ $f(57) = -3249 + 114 - 1 = -3136$ $f(58) = -3364 + 116 - 1 = -3249$ $f(59) = -3481 + 118 - 1 = -3364$ $f(60) = -3600 + 120 - 1 = -3481$ $f(61) = -3721 + 122 - 1 = -3600$ $f(62) = -3844 + 124 - 1 = -3721$ $f(63) = -3969 + 126 - 1 = -3844$ $f(64) = -4096 + 128 - 1 = -3969$ $f(65) = -4225 + 130 - 1 = -4096$ $f(66) = -4356 + 132 - 1 = -4225$ $f(67) = -4489 + 134 - 1 = -4356$ $f(68) = -4624 + 136 - 1 = -4489$ $f(69) = -4761 + 138 - 1 = -4624$ $f(70) = -4900 + 140 - 1 = -4761$ $f(71) = -5041 + 142 - 1 = -4900$ $f(72) = -5184 + 144 - 1 = -5041$ $f(73) = -5329 + 146 - 1 = -5184$ $f(74) = -5476 + 148 - 1 = -5329$ $f(75) = -5625 + 150 - 1 = -5476$ $f(76) = -5776 + 152 - 1 = -5625$ $f(77) = -5929 + 154 - 1 = -5776$ $f(78) = -6084 + 156 - 1 = -5929$ $f(79) = -6241 + 158 - 1 = -6084$ $f(80) = -6400 + 160 - 1 = -6241$ $f(81) = -6561 + 162 - 1 = -6400$ $f(82) = -6724 + 164 - 1 = -6561$ $f(83) = -6889 + 166 - 1 = -6724$ $f(84) = -7056 + 168 - 1 = -6889$ $f(85) = -7225 + 170 - 1 = -7056$ $f(86) = -7396 + 172 - 1 = -7225$ $f(87) = -7569 + 174 - 1 = -7396$ $f(88) = -7744 + 176 - 1 = -7569$ $f(89) = -7921 + 178 - 1 = -7744$ $f(90) = -8100 + 180 - 1 = -7921$ $f(91) = -8281 + 182 - 1 = -8100$ $f(92) = -8464 + 184 - 1 = -8281$ $f(93) = -8649 + 186 - 1 = -8464$ $f(94) = -8836 + 188 - 1 = -8649$ $f(95) = -9025 + 190 - 1 = -8836$ $f(96) = -9216 + 192 - 1 = -9025$ $f(97) = -9409 + 194 - 1 = -9216$ $f(98) = -9604 + 196 - 1 = -9409$ $f(99) = -9801 + 198 - 1 = -9604$ $f(100) = -10000 + 200 - 1 = -9801$ $f(101) = -10201 + 202 - 1 = -10000$ $f(102) = -10404 + 204 - 1 = -10201$ $f(103) = -10609 + 206 - 1 = -10404$ $f(104) = -10816 + 208 - 1 = -10609$ $f(105) = -11025 + 210 - 1 = -10816$ $f(106) = -11236 + 212 - 1 = -11025$ $f(107) = -11449 + 214 - 1 = -11236$ $f(108) = -11664 + 216 - 1 = -11449$ $f(109) = -11881 + 218 - 1 = -11664$ $f(110) = -12100 + 220 - 1 = -11881$ $f(111) = -12321 + 222 - 1 = -12100$ $f(112) = -12544 + 224 - 1 = -12321$ $f(113) = -12769 + 226 - 1 = -12544$ $f(114) = -12996 + 228 - 1 = -12769$ $f(115) = -13225 + 230 - 1 = -12996$ $f(116) = -13456 + 232 - 1 = -13225$ $f(117) = -13689 + 234 - 1 = -13456$ $f(118) = -13924 + 236 - 1 = -13689$ $f(119) = -14161 + 238 - 1 = -13924$ $f(120) = -14400 + 240 - 1 = -14161$ $f(121) = -14641 + 242 - 1 = -14400$ $f(122) = -14884 + 244 - 1 = -14641$ $f(123) = -15129 + 246 - 1 = -14884$ $f(124) = -15376 + 248 - 1 = -15129$ $f(125) = -15625 + 250 - 1 = -15376$ $f(126) = -15876 + 252 - 1 = -15625$ $f(127) = -16129 + 254 - 1 = -15876$ $f(128) = -16384 + 256 - 1 = -16129$ $f(129) = -16641 + 258 - 1 = -16384$ $f(130) = -16900 + 260 - 1 = -16641$ $f(131) = -17161 + 262 - 1 = -16900$ $f(132) = -17424 + 264 - 1 = -17161$ $f(133) = -17689 + 266 - 1 = -17424$ $f(134) = -17956 + 268 - 1 = -17689$ $f(135) = -18225 + 270 - 1 = -17956$ $f(136) = -18496 + 272 - 1 = -18225$ $f(137) = -18769 + 274 - 1 = -18496$ $f(138) = -19044 + 276 - 1 = -18769$ $f(139) = -19321 + 278 - 1 = -19044$ $f(140) = -19600 + 280 - 1 = -19321$ $f(141) = -19881 + 282 - 1 = -19600$ $f(142) = -20164 + 284 - 1 = -19881$ $f(143) = -20449 + 286 - 1 = -20164$ $f(144) = -20736 + 288 - 1 = -20449$ $f(145) = -21025 + 290 - 1 = -20736$ $f(146) = -21316 + 292 - 1 = -21025$ $f(147) = -21609 + 294 - 1 = -21316$ $f(148) = -21904 + 296 - 1 = -21609$ $f(149) = -22201 + 298 - 1 = -21904$ $f(150) = -22500 + 300 - 1 = -22201$ $f(151) = -22801 + 302 - 1 = -22500$ $f(152) = -23104 + 304 - 1 = -22801$ $f(153) = -23409 + 306 - 1 = -23104$ $f(154) = -23716 + 308 - 1 = -23409$ $f(155) = -24025 + 310 - 1 = -23716$ $f(156) = -24336 + 312 - 1 = -24025$ $f(157) = -24649 + 314 - 1 = -24336$ $f(158) = -24964 + 316 - 1 = -24649$ $f(159) = -25281 + 318 - 1 = -24964$ $f(160) = -25600 + 320 - 1 = -25281$ $f(161) = -25921 + 322 - 1 = -25600$ $f(162) = -26244 + 324 - 1 = -25921$ $f(163) = -26569 + 326 - 1 = -26244$ $f(164) = -26896 + 328 - 1 = -26569$ $f(165) = -27225 + 330 - 1 = -26896$ $f(166) = -27556 + 332 - 1 = -27225$ $f(167) = -27889 + 334 - 1 = -27556$ $f(168) = -28224 + 336 - 1 = -27889$ $f(169) = -28561 + 338 - 1 = -28224$ $f(170) = -28900 + 340 - 1 = -28561$ $f(171) = -29241 + 342 - 1 = -28900$ $f(172) = -29584 + 344 - 1 = -29241$ $f(173) = -29929 + 346 - 1 = -29584$ $f(174) = -30276 + 348 - 1 = -29929$ $f(175) = -30625 + 350 - 1 = -30276$ $f(176) = -30976 + 352 - 1 = -30625$ $f(177) = -31329 + 354 - 1 = -30976$ $f(178) = -31684 + 356 - 1 = -31329$ $f(179) = -32041 + 358 - 1 = -31684$ $f(180) = -32400 + 360 - 1 = -32041$ $f(181) = -32761 + 362 - 1 = -32400$ $f(182) = -33124 + 364 - 1 = -32761$ $f(183) = -33489 + 366 - 1 = -33124$ $f(184) = -33856 + 368 - 1 = -33489$ $f(185) = -34225 + 370 - 1 = -33856$ $f(186) = -34596 + 372 - 1 = -34225$ $f(187) = -34969 + 374 - 1 = -34596$ $f(188) = -35344 + 376 - 1 = -34969$ $f(189) = -35721 + 378 - 1 = -35344$ $f(190) = -36100 + 380 - 1 = -35721$ $f(191) = -36481 + 382 - 1 = -36100$ $f(192) = -36864 + 384 - 1 = -36481$ $f(193) = -37249 + 386 - 1 = -36864$ $f(194) = -37636 + 388 - 1 = -37249$ $f(195) = -38025 + 390 - 1 = -37636$ $f(196) = -38416 + 392 - 1 = -38025$ $f(197) = -38809 + 394 - 1 = -38416$ $f(198) = -39204 + 396 - 1 = -38809$ $f(199) = -39601 + 398 - 1 = -39204$ $f(200) = -40000 + 400 - 1 = -39601$ $f(201) = -40401 + 402 - 1 = -40000$ $f(202) = -40804 + 404 - 1 = -40401$ $f(203) = -41209 + 406 - 1 = -40804$ $f(204) = -41616 + 408 - 1 = -41209$ $f(205) = -42025 + 410 - 1 = -41616$ $f(206) = -42436 + 412 - 1 = -42025$ $f(207) = -42849 + 414 - 1 = -42436$ $f(208) = -43264 + 416 - 1 = -42849$ $f(209) = -43681 + 418 - 1 = -43264$ $f(210) = -44100 + 420 - 1 = -43681$ $f(211) = -44521 + 422 - 1 = -44100$ $f(212) = -44944 + 424 - 1 = -44521$ $f(213) = -45369 + 426 - 1 = -44944$ $f(214) = -45796 + 428 - 1 = -45369$ $f(215) = -46225 + 430 - 1 = -45796$ $f(216) = -46656 + 432 - 1 = -46225$ $f(217) = -47089 + 434 - 1 = -46656$ $f(218) = -47524 + 436 - 1 = -47089$ $f(219) = -47961 + 438 - 1 = -47524$ $f(220) = -48400 + 440 - 1 = -47961$ $f(221) = -48841 + 442 - 1 = -48400$ $f(222) = -49284 + 444 - 1 = -48841$ $f(223) = -49729 + 446 - 1 = -49284$ $f(224) = -50176 + 448 - 1 = -49729$ $f(225) = -50625 + 450 - 1 = -50176$ $f(226) = -51076 + 452 - 1 = -50625$ $f(227) = -51529 + 454 - 1 = -51076$ $f(228) = -51984 + 456 - 1 = -51529$ $f(229) = -52441 + 458 - 1 = -51984$ $f(230) = -52900 + 460 - 1 = -52441$ $f(231) = -53361 + 462 - 1 = -52900$ $f(232) = -53824 + 464 - 1 = -53361$ $f(233) = -54289 + 466 - 1 = -53824$ $f(234) = -54756 + 468 - 1 = -54289$ $f(235) = -55225 + 470 - 1 = -54756$ $f(236) = -55696 + 472 - 1 = -55225$ $f(237) = -56169 + 474 - 1 = -55696$ $f(238) = -56644 + 476 - 1 = -56169$ $f(239) = -57121 + 478 - 1 = -56644$ $f(240) = -57600 + 480 - 1 = -57121$ $f(241) = -58081 + 482 - 1 = -57600$ $f(242) = -58564 + 484 - 1 = -58081$ $f(243) = -59049 + 486 - 1 = -58564$ $f(244) = -59536 + 488 - 1 = -59049$ $f(245) = -60025 + 490 - 1 = -59536$ $f(246) = -60516 + 492 - 1 = -60025$ $f(247) = -61009 + 494 - 1 = -60516$ $f(248) = -61504 + 496 - 1 = -61009$ $f(249) = -62001 + 498 - 1 = -61504$ $f(250) = -62500 + 500 - 1 = -62001$ $f(251) = -63001 + 502 - 1 = -62500$ $f(252) = -63504 + 504 - 1 = -63001$ $f(253) = -64009 + 506 - 1 = -63504$ $f(254) = -64516 + 508 - 1 = -64009$ $f(255) = -65025 + 510 - 1 = -64516$ $f(256) = -65536 + 512 - 1 = -65025$ $f(257) = -66049 + 514 - 1 = -65536$ $f(258) = -66564 + 516 - 1 = -66049$ $f(259) = -67081 + 518 - 1 = -66564$ $f(260) = -67600 + 520 - 1 = -67081$ $f(261) = -68121 + 522 - 1 = -67600$ $f(262) = -68644 + 524 - 1 = -68121$ $f(263) = -69169 + 526 - 1 = -68644$ $f(264) = -69696 + 528 - 1 = -69169$ $f(265) = -70225 + 530 - 1 = -69696$ $f(266) = -70756 + 532 - 1 = -70225$ $f(267) = -71289 + 534 - 1 = -70756$ $f(268) = -71824 + 536 - 1 = -71289$ $f(269) = -72361 + 538 - 1 = -71824$ $f(270) = -72900 + 540 - 1 = -72361$ $f(271) = -73441 + 542 - 1 = -72900$ $f(272) = -73984 + 544 - 1 = -73441$ $f(273) = -74529 + 546 - 1 = -73984$ $f(274) = -75076 + 548 - 1 = -74529$ $f(275) = -75625 + 550 - 1 = -75076$ $f(276) = -76176 + 552 - 1 = -75625$ $f(277) = -76729 + 554 - 1 = -76176$ $f(278) = -77284 + 556 - 1 = -76729$ $f(279) = -77841 + 558 - 1 = -77284$ $f(280) = -78400 + 560 - 1 = -77841$ $f(281) = -78961 + 562 - 1 = -78400$ $f(282) = -79524 + 564 - 1 = -78961$ $f(283) = -80089 + 566 - 1 = -79524$ $f(284) = -80656 + 568 - 1 = -80089$ $f(285) = -81225 + 570 - 1 = -80656$ $f(286) = -81796 + 572 - 1 = -81225$ $f(287) = -82369 + 574 - 1 = -81796$ $f(288) = -82944 + 576 - 1 = -82369$ $f(289) = -83521 + 578 - 1 = -82944$ $f(290) = -84100 + 580 - 1 = -83521$ $f(291) = -84681 + 582 - 1 = -84100$ $f(292) = -85264 + 584 - 1 = -84681$ $f(293) = -85849 + 586 - 1 = -85264$ $f(294) = -86436 + 588 - 1 = -85849$ $f(295) = -87025 + 590 - 1 = -86436$ $f(296) = -87616 + 592 - 1 = -87025$ $f(297) = -88209 + 594 - 1 = -87616$ $f(298) = -88804 + 596 - 1 = -88209$ $f(299) = -89401 + 598 - 1 = -88804$ $f(300) = -90000 + 600 - 1 = -89401$ $f(301) = -90601 + 602 - 1 = -90000$ $f(302) = -91204 + 604 - 1 = -90601$ $f(303) = -91809 + 606 - 1 = -91204$ $f(304) = -92416 + 608 - 1 = -91809$ $f(305) = -93025 + 610 - 1 = -92416$ $f(306) = -93636 + 612 - 1 = -93025$ $f(307) = -94249 + 614 - 1 = -93636$ $f(308) = -94864 + 616 - 1 = -94249$ $f(309) = -95481 + 618 - 1 = -94864$ $f(310) = -96100 + 620 - 1 = -95481$ $f(311) = -96721 + 622 - 1 = -96100$ $f(312) = -97344 + 624 - 1 = -96721$ $f(313) = -97969 + 626 - 1 = -97344$ $f(314) = -98596 + 628 - 1 = -97969$ $f(315) = -99225 + 630 - 1 = -98596$ $f(316) = -99856 + 632 - 1 = -99225$ $f(317) = -100489 + 634 - 1 = -99856$ $f(318) = -101124 + 636 - 1 = -100489$ $f(319) = -101761 + 638 - 1 = -101124$ $f(320) = -102400 + 640 - 1 = -101761$ $f(321) = -103041 + 642 - 1 = -102400$ $f(322) = -103684 + 644 - 1 = -103041$ $f(323) = -104329 + 646 - 1 = -103684$ $f(324) = -104976 + 648 - 1 = -104329$ $f(325) = -105625 + 650 - 1 = -104976$ $f(326) = -106276 + 652 - 1 = -105625$ $f(327) = -106929 + 654 - 1 = -106276$ $f(328) = -107584 + 656 - 1 = -106929$ $f(329) = -108241 + 658 - 1 = -107584$ $f(330) = -108900 + 660 - 1 = -1$	

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{g}{p}$$

$$\beta > 0, \alpha < 0$$

$$\alpha = -r \Rightarrow \beta = \frac{r}{p}$$

$$\frac{g}{p} = \frac{-r}{-r} = \frac{r}{p} \quad \checkmark$$

$$p^2\alpha - v\beta + g\beta = 0 \Rightarrow p^2\alpha = -r\beta \Rightarrow \beta = \frac{r}{\alpha} \Rightarrow$$

$$q^2 - v\alpha + g\beta = 0$$

$$q^2 - v\alpha + \frac{r}{\alpha} = 0 \xrightarrow{\times \alpha} q^2 - v\alpha^2 - 1 = 0 \xrightarrow{q^2 = 6} 6 - v\alpha^2 - 1 = 0 \xrightarrow{\alpha^2 = 5} (5 - v)(5 + v) = 0 \Rightarrow v = 5, \alpha = \pm \sqrt{5}$$

$$\left. \begin{array}{l} \beta^2 + \beta = -r = 0 \Rightarrow \beta = 0 \text{ or } \beta = -r \\ \alpha^2 = -p\beta + 1 \Rightarrow \beta = \frac{1 - \alpha^2}{p} \end{array} \right\} \Rightarrow \alpha^2 + \beta^2 - 1 - r = 0 \Rightarrow \frac{g^2 - r^2}{p^2} = 0 \Rightarrow g = \pm r$$

$$m^2 + r_m - r = 0 \Rightarrow$$

$$m^2 + r_m - 1 = 0$$

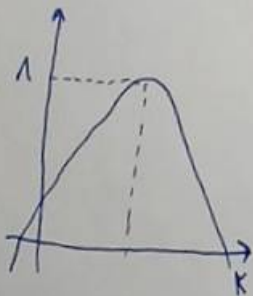
$$m = r \Rightarrow m^2 + r_m - 1 = 0 \Rightarrow \Delta > 0 \quad \checkmark$$

$$m = -r \Rightarrow m^2 - r_m + 1 = 0 \Rightarrow \Delta < 0 \quad \times$$

$$m^2 + r_m - 1 = 0$$

$$g = -r \quad \checkmark$$

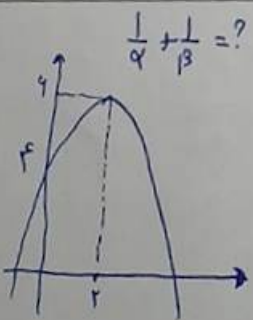
$$f(x) = mx^2 + rx + \frac{m}{r} + v \quad \frac{-b}{2a} = 1 \Rightarrow \frac{r}{2m} = 1 \Rightarrow r = 2m \Rightarrow y = m^2 + 2m - 1 = r^2 \Rightarrow$$



$$ym^2 - rm - 1 = 0 \Rightarrow \frac{r}{m} = 2 \Rightarrow m^2 - 2m - 1 = 0 \Rightarrow (m-1)(m+1) = 0$$

$$m = 1, m = -1 \Rightarrow y = -rm^2 + rm + r \xrightarrow{m=1} y = -r + r + r = r \quad \checkmark$$

$$m = -1 \Rightarrow y = -r + (-r) + r = -r \quad \times$$



$$\frac{1}{\alpha} + \frac{1}{\beta} = ?$$

$$\frac{p\alpha - b^r}{f_u} = 4 \Rightarrow p\alpha - b^r = rfa \xrightarrow{(I)} \frac{-b}{ra} = r \Rightarrow -b = ra \xrightarrow{(I)} \alpha = -\frac{1}{r} \quad c = f$$

$$-fb - b^r = -rb \Rightarrow rb = b^r, b \neq 0, b = r$$

$$y = -\frac{1}{r}m^2 + rm + r$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\beta + \alpha}{\alpha\beta} = \frac{g}{p} = \frac{f}{-1} = -\frac{1}{f} \quad \checkmark$$

$$m^2 - fan - fn + r\alpha^2 + 4a + r = 0 \xrightarrow{m=r} f - 1a - 1 + r\alpha^2 + 4a + r = 0 \Rightarrow r\alpha^2 - r\alpha - 1 = 0 \Rightarrow$$

$$\alpha = 1, \alpha = -\frac{1}{r} \Rightarrow m^2 - \frac{1}{r}m + \frac{r}{r} = 0 \Rightarrow (m - \frac{1}{r})(m - r) = 0 \Rightarrow m = r$$

$$m^2 - 1a + r = 0$$

$$(m - r)(m - 1) = 0$$

$$\alpha = r$$

$$m = r \quad \checkmark$$