

$f(x)$ و a باید هم علامت باشند تا ضرب آنها مثبت شود (تاییدیه بکنید) $f(x) \geq 0$
 برای همین فقط زمانی که نمودار در ناحیه اقل و کسوم است قابل قبول است
 $\Rightarrow D_f = \{x \mid x \in [7, 15] \cup [-5, 9]\}$

$\frac{-9c}{f(c)} \geq 0$ $\Rightarrow$ c و $f(c)$ باید هم‌نامی علامت باشند
 باشد تغییرات مثبت بعد از این اتفاق
 در همان جایی می افتد که تابع در آن منفی می باشد

امیر و (خ) مختلف الامارات بائندى مل زبده (الافعال قطعى منقلى است) و بائندى پست است
مشتبى ي شدر

$$\begin{aligned} f(x) - x f(x) &= x^y - x^y + \varepsilon \\ f(x) &= f(x) - x f(x) = 0 - y + \varepsilon \\ -f(x) &= y \Rightarrow f(x) = -y \\ \bullet f(-x) &= f(-x) - x f(x) = \varepsilon + y + \varepsilon \\ \Rightarrow f(-x) &= \varepsilon - \varepsilon + y + \varepsilon = \underline{10} \end{aligned}$$

$$f(x) = \begin{cases} x - \sqrt{x+2} & x > c \\ x + c & x \leq c \end{cases}$$

$$f(x) = ax^2 + bx + c \quad \Rightarrow \quad f(x-1) - f(x) = 4x + 4$$

$$f(0) = 1$$

$$f'(x) = a - b + 2cx$$

$$f'(0) = a - b + 0 = 1$$

$$f(1) = a + b + c = 1$$

$$f(2) = 4a + 2b + c = 1$$

$$f(3) = 9a + 3b + c = 1$$

$$f(4) = 16a + 4b + c = 1$$

$$f(5) = 25a + 5b + c = 1$$

$$f(6) = 36a + 6b + c = 1$$

$$f(7) = 49a + 7b + c = 1$$

$$f(8) = 64a + 8b + c = 1$$

$$f(9) = 81a + 9b + c = 1$$

$$f(10) = 100a + 10b + c = 1$$

$$f(11) = 121a + 11b + c = 1$$

$$f(12) = 144a + 12b + c = 1$$

$$f(13) = 169a + 13b + c = 1$$

$$f(14) = 196a + 14b + c = 1$$

$$f(15) = 225a + 15b + c = 1$$

$$f(16) = 256a + 16b + c = 1$$

$$f(17) = 289a + 17b + c = 1$$

$$f(18) = 324a + 18b + c = 1$$

$$f(19) = 361a + 19b + c = 1$$

$$f(20) = 400a + 20b + c = 1$$

$$f(21) = 441a + 21b + c = 1$$

$$f(22) = 484a + 22b + c = 1$$

$$f(23) = 529a + 23b + c = 1$$

$$f(24) = 576a + 24b + c = 1$$

$$f(25) = 625a + 25b + c = 1$$

$$f(26) = 676a + 26b + c = 1$$

$$f(27) = 729a + 27b + c = 1$$

$$f(28) = 784a + 28b + c = 1$$

$$f(29) = 841a + 29b + c = 1$$

$$f(30) = 900a + 30b + c = 1$$

$$f(31) = 961a + 31b + c = 1$$

$$f(32) = 1024a + 32b + c = 1$$

$$f(33) = 1089a + 33b + c = 1$$

$$f(34) = 1156a + 34b + c = 1$$

$$f(35) = 1225a + 35b + c = 1$$

$$f(36) = 1296a + 36b + c = 1$$

$$f(37) = 1369a + 37b + c = 1$$

$$f(38) = 1444a + 38b + c = 1$$

$$f(39) = 1521a + 39b + c = 1$$

$$f(40) = 1600a + 40b + c = 1$$

$$f(41) = 1681a + 41b + c = 1$$

$$f(42) = 1764a + 42b + c = 1$$

$$f(43) = 1849a + 43b + c = 1$$

$$f(44) = 1936a + 44b + c = 1$$

$$f(45) = 2025a + 45b + c = 1$$

$$f(46) = 2116a + 46b + c = 1$$

$$f(47) = 2209a + 47b + c = 1$$

$$f(48) = 2304a + 48b + c = 1$$

$$f(49) = 2401a + 49b + c = 1$$

$$f(50) = 2500a + 50b + c = 1$$

$$f(51) = 2601a + 51b + c = 1$$

$$f(52) = 2704a + 52b + c = 1$$

$$f(53) = 2809a + 53b + c = 1$$

$$f(54) = 2916a + 54b + c = 1$$

$$f(55) = 3025a + 55b + c = 1$$

$$f(56) = 3136a + 56b + c = 1$$

$$f(57) = 3249a + 57b + c = 1$$

$$f(58) = 3364a + 58b + c = 1$$

$$f(59) = 3481a + 59b + c = 1$$

$$f(60) = 3600a + 60b + c = 1$$

$$f(61) = 3721a + 61b + c = 1$$

$$f(62) = 3844a + 62b + c = 1$$

$$f(63) = 3969a + 63b + c = 1$$

$$f(64) = 4096a + 64b + c = 1$$

$$f(65) = 4225a + 65b + c = 1$$

$$f(66) = 4356a + 66b + c = 1$$

$$f(67) = 4489a + 67b + c = 1$$

$$f(68) = 4624a + 68b + c = 1$$

$$f(69) = 4761a + 69b + c = 1$$

$$f(70) = 4900a + 70b + c = 1$$

$$f(71) = 5041a + 71b + c = 1$$

$$f(72) = 5184a + 72b + c = 1$$

$$f(73) = 5329a + 73b + c = 1$$

$$f(74) = 5476a + 74b + c = 1$$

$$f(75) = 5625a + 75b + c = 1$$

$$f(76) = 5776a + 76b + c = 1$$

$$f(77) = 5929a + 77b + c = 1$$

$$f(78) = 6084a + 78b + c = 1$$

$$f(79) = 6241a + 79b + c = 1$$

$$f(80) = 6400a + 80b + c = 1$$

$$f(81) = 6561a + 81b + c = 1$$

$$f(82) = 6724a + 82b + c = 1$$

$$f(83) = 6889a + 83b + c = 1$$

$$f(84) = 7056a + 84b + c = 1$$

$$f(85) = 7225a + 85b + c = 1$$

$$f(86) = 7396a + 86b + c = 1$$

$$f(87) = 7569a + 87b + c = 1$$

$$f(88) = 7744a + 88b + c = 1$$

$$f(89) = 7921a + 89b + c = 1$$

$$f(90) = 8100a + 90b + c = 1$$

$$f(91) = 8281a + 91b + c = 1$$

$$f(92) = 8464a + 92b + c = 1$$

$$f(93) = 8649a + 93b + c = 1$$

$$f(94) = 8836a + 94b + c = 1$$

$$f(95) = 9025a + 95b + c = 1$$

$$f(96) = 9216a + 96b + c = 1$$

$$f(97) = 9409a + 97b + c = 1$$

$$f(98) = 9604a + 98b + c = 1$$

$$f(99) = 9801a + 99b + c = 1$$

$$f(100) = 10000a + 100b + c = 1$$

$$f(101) = 10201a + 101b + c = 1$$

$$f(102) = 10404a + 102b + c = 1$$

$$f(103) = 10609a + 103b + c = 1$$

$$f(104) = 10816a + 104b + c = 1$$

$$f(105) = 11025a + 105b + c = 1$$

$$f(106) = 11236a + 106b + c = 1$$

$$f(107) = 11449a + 107b + c = 1$$

$$f(108) = 11664a + 108b + c = 1$$

$$f(109) = 11881a + 109b + c = 1$$

$$f(110) = 12100a + 110b + c = 1$$

$$f(111) = 12321a + 111b + c = 1$$

$$f(112) = 12544a + 112b + c = 1$$

$$f(113) = 12769a + 113b + c = 1$$

$$f(114) = 12996a + 114b + c = 1$$

$$f(115) = 13225a + 115b + c = 1$$

$$f(116) = 13456a + 116b + c = 1$$

$$f(117) = 13689a + 117b + c = 1$$

$$f(118) = 13924a + 118b + c = 1$$

$$f(119) = 14161a + 119b + c = 1$$

$$f(120) = 14400a + 120b + c = 1$$

$$f(121) = 14641a + 121b + c = 1$$

$$f(122) = 14884a + 122b + c = 1$$

$$f(123) = 15129a + 123b + c = 1$$

$$f(124) = 15376a + 124b + c = 1$$

$$f(125)$$

$$f(x) = \frac{(x+2)^2 + 1}{(x+2)^2 + 2} \Rightarrow f(\sqrt{x}-2) = \frac{(\sqrt{x})^2 + 1}{(\sqrt{x})^2 + 2} = \frac{x}{4} = \frac{x}{4}$$

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$$f\left(x - \frac{1}{x}\right) = \frac{x^2 + 1}{x^2} \Rightarrow f\left(x - \frac{1}{x}\right) = \frac{x^2}{x^2} + \frac{1}{x^2} = x^2 + \frac{1}{x^2}$$

$$\Rightarrow f\left(x - \frac{1}{x}\right) = \left(x - \frac{1}{x}\right)^2 + 2$$

$$\Rightarrow f(-2) = (-2)^2 + 2 = 6$$

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الف، $\frac{f}{g} = \left\{ \left(2, \frac{0}{\sqrt{2}}\right), \left(1, \frac{-\sqrt{2}}{\sqrt{2}}\right), \left(0, \frac{2}{\sqrt{2}}\right) \right\}$

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ب، $\frac{f}{f} = \left\{ \left(2, \frac{\sqrt{2}}{\sqrt{2}}\right), \left(1, \frac{-\sqrt{2}}{\sqrt{2}}\right), \left(0, \frac{2}{\sqrt{2}}\right) \right\}$

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الف، $f(x) = \{(2, 2), (3, 8), (-5, 4), (1, -4)\}$

ب، $f(x) + 1 = \{(2, 3), (3, 9), (-5, 5), (1, -3)\}$

ج، $\{ (2, 4), (3, 12), (-5, 13), (1, 13) \} = 3f'(x) + 1$

د، $\{ (1, 1), \left(\frac{3}{2}, 4\right), \left(-\frac{5}{2}, 2\right), \left(\frac{1}{2}, -2\right) \} = f(2x)$

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الف، $f - g = \{(2, 2), (1, 4), (3, 2)\}$

ب، $\frac{2f}{g} = 2f = (2, 4), (7, 8), (1, 8), (4, 4), (5, 4)$

$\left\{ \left(1, \frac{4}{5}\right), \left(2, \frac{4}{7}\right), (3, -2) \right\}$