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$$f(x) = x^2 + 2(x - 2|x|) + 2$$

(1)  $x \geq 0$  のとき

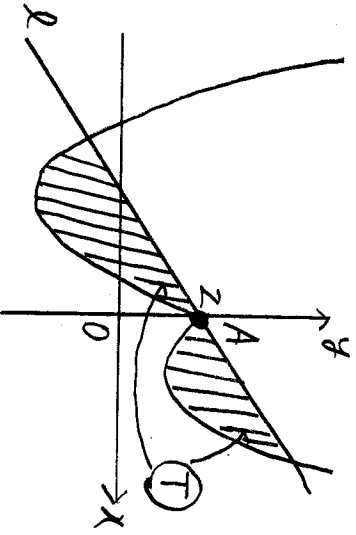
$$f(x) = x^2 + 2(x - 2x) + 2$$

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

(1)  $x < 0$  のとき

$$f(x) = x^2 + 2(x + 2x) + 2$$

$$= x^2 + 6x + 2 = (x+3)^2 - 7$$



直線  $y = mx + 2$

$f(x)$  と直線が3点で交わり

$\Leftrightarrow$  [1]

$$\begin{cases} f(x) = x^2 - 2x + 2 \\ y = mx + 2 \end{cases}$$

の共有点のx座標が0と正になる。

[2]

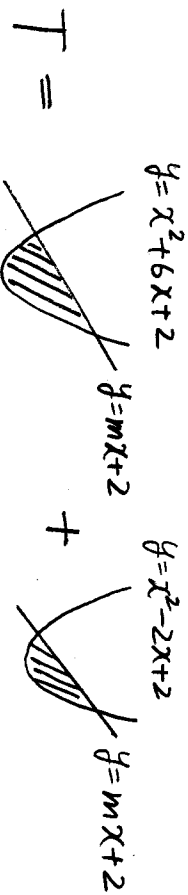
$$\begin{cases} f(x) = x^2 + 6x + 2 \\ y = mx + 2 \end{cases}$$

の共有点のx座標が0と負になる。

[1] ①/

[2] ②/

②.  $m$  の範囲は



解

(3)  $x^2 - 2x + 2 = 0$  (1)  $x^2 + 6x + 2 = 0$  (2)  $x^2 + 6x + 2 = 0$  (3)  $x^2 - 2x + 2 = 0$  (4)  $x^2 + 6x + 2 = 0$  (5)  $x^2 - 2x + 2 = 0$  (6)  $x^2 + 6x + 2 = 0$  (7)  $x^2 - 2x + 2 = 0$  (8)  $x^2 + 6x + 2 = 0$  (9)  $x^2 - 2x + 2 = 0$  (10)  $x^2 + 6x + 2 = 0$  (11)  $x^2 - 2x + 2 = 0$  (12)  $x^2 + 6x + 2 = 0$  (13)  $x^2 - 2x + 2 = 0$  (14)  $x^2 + 6x + 2 = 0$  (15)  $x^2 - 2x + 2 = 0$  (16)  $x^2 + 6x + 2 = 0$  (17)  $x^2 - 2x + 2 = 0$  (18)  $x^2 + 6x + 2 = 0$  (19)  $x^2 - 2x + 2 = 0$  (20)  $x^2 + 6x + 2 = 0$  (21)  $x^2 - 2x + 2 = 0$  (22)  $x^2 + 6x + 2 = 0$  (23)  $x^2 - 2x + 2 = 0$  (24)  $x^2 + 6x + 2 = 0$  (25)  $x^2 - 2x + 2 = 0$  (26)  $x^2 + 6x + 2 = 0$  (27)  $x^2 - 2x + 2 = 0$  (28)  $x^2 + 6x + 2 = 0$  (29)  $x^2 - 2x + 2 = 0$  (30)  $x^2 + 6x + 2 = 0$  (31)  $x^2 - 2x + 2 = 0$  (32)  $x^2 + 6x + 2 = 0$  (33)  $x^2 - 2x + 2 = 0$  (34)  $x^2 + 6x + 2 = 0$  (35)  $x^2 - 2x + 2 = 0$  (36)  $x^2 + 6x + 2 = 0$  (37)  $x^2 - 2x + 2 = 0$  (38)  $x^2 + 6x + 2 = 0$  (39)  $x^2 - 2x + 2 = 0$  (40)  $x^2 + 6x + 2 = 0$  (41)  $x^2 - 2x + 2 = 0$  (42)  $x^2 + 6x + 2 = 0$  (43)  $x^2 - 2x + 2 = 0$  (44)  $x^2 + 6x + 2 = 0$  (45)  $x^2 - 2x + 2 = 0$  (46)  $x^2 + 6x + 2 = 0$  (47)  $x^2 - 2x + 2 = 0$  (48)  $x^2 + 6x + 2 = 0$  (49)  $x^2 - 2x + 2 = 0$  (50)  $x^2 + 6x + 2 = 0$  (51)  $x^2 - 2x + 2 = 0$  (52)  $x^2 + 6x + 2 = 0$  (53)  $x^2 - 2x + 2 = 0$  (54)  $x^2 + 6x + 2 = 0$  (55)  $x^2 - 2x + 2 = 0$  (56)  $x^2 + 6x + 2 = 0$  (57)  $x^2 - 2x + 2 = 0$  (58)  $x^2 + 6x + 2 = 0$  (59)  $x^2 - 2x + 2 = 0$  (60)  $x^2 + 6x + 2 = 0$  (61)  $x^2 - 2x + 2 = 0$  (62)  $x^2 + 6x + 2 = 0$  (63)  $x^2 - 2x + 2 = 0$  (64)  $x^2 + 6x + 2 = 0$  (65)  $x^2 - 2x + 2 = 0$  (66)  $x^2 + 6x + 2 = 0$  (67)  $x^2 - 2x + 2 = 0$  (68)  $x^2 + 6x + 2 = 0$  (69)  $x^2 - 2x + 2 = 0$  (70)  $x^2 + 6x + 2 = 0$  (71)  $x^2 - 2x + 2 = 0$  (72)  $x^2 + 6x + 2 = 0$  (73)  $x^2 - 2x + 2 = 0$  (74)  $x^2 + 6x + 2 = 0$  (75)  $x^2 - 2x + 2 = 0$  (76)  $x^2 + 6x + 2 = 0$  (77)  $x^2 - 2x + 2 = 0$  (78)  $x^2 + 6x + 2 = 0$  (79)  $x^2 - 2x + 2 = 0$  (80)  $x^2 + 6x + 2 = 0$  (81)  $x^2 - 2x + 2 = 0$  (82)  $x^2 + 6x + 2 = 0$  (83)  $x^2 - 2x + 2 = 0$  (84)  $x^2 + 6x + 2 = 0$  (85)  $x^2 - 2x + 2 = 0$  (86)  $x^2 + 6x + 2 = 0$  (87)  $x^2 - 2x + 2 = 0$  (88)  $x^2 + 6x + 2 = 0$  (89)  $x^2 - 2x + 2 = 0$  (90)  $x^2 + 6x + 2 = 0$  (91)  $x^2 - 2x + 2 = 0$  (92)  $x^2 + 6x + 2 = 0$  (93)  $x^2 - 2x + 2 = 0$  (94)  $x^2 + 6x + 2 = 0$  (95)  $x^2 - 2x + 2 = 0$  (96)  $x^2 + 6x + 2 = 0$  (97)  $x^2 - 2x + 2 = 0$  (98)  $x^2 + 6x + 2 = 0$  (99)  $x^2 - 2x + 2 = 0$  (100)  $x^2 + 6x + 2 = 0$