

$[x, y]$

$$y^2 - 2x - 4 = 0$$

$$\underline{3y^2 + 2yx = 0}$$

(1)

$$\underline{y}(\underline{3y + 2x}) = 0$$

$$\boxed{y=0} \text{ OR } \boxed{3y+2x=0}$$

$$0^2 - 2x - 4 = 0$$

$$-4 = 2x$$

$$\boxed{2 = x}$$

$[-2, 0]$

result +

$[-2, 0]$

$[6, -4]$

$[-\frac{3}{2}, 1]$

$$y^2 - 2x - 4 = 3y^2 + 2yx \quad ;$$

$$2x = -3y$$

$$y^2 - (-3y) - 4 = 0$$

$$y^2 + 3y - 4 = 0$$

$$(y+4)(y-1) = 0$$

$$\boxed{y = -4} \text{ OR } \boxed{y = 1}$$

$$2x = -3y$$

$$x = -\frac{3}{2}y$$

$$x = -\frac{3}{2} \cdot (-4)$$

$$\boxed{x = 6}$$

$$x = -\frac{3}{2} \cdot 1$$

$$\boxed{x = -\frac{3}{2}}$$

$[6, -4]$

$[-\frac{3}{2}, 1]$

$$y^2 - 2x - 4 = 0$$

$$3y^2 + 2yx = 0$$

(2)

$$\frac{y^2 - 4}{2} = x$$

$$3y^2 + 2y \left(\frac{y^2 - 4}{2} \right) = 0$$

$$6y^2 + 2y(y^2 - 4) = 0$$

$$6y^2 + 2y^3 - 8y = 0$$

$$y(6y + 2y^2 - 8) = 0$$

$$2y(y^2 + 3y - 4) = 0$$

$$y = 0$$

or

$$y^2 + 3y - 4 = 0$$

$$(y + 4)(y - 1) = 0$$

$$y = -4 \text{ or } y = 1$$

$$x = \frac{0^2 - 4}{2}$$

$$x = -2$$

$$\frac{16 - 4}{2} = x$$

$$6 = x$$

$$\frac{1 - 4}{2} = x$$

$$-\frac{3}{2} = x$$

beside +

$$[-2, 0]$$

$$[6, -4]$$

$$[-\frac{3}{2}, 1]$$

Warning

$$y^2 = 2x + 4$$

$$y = \pm \sqrt{2x + 4}$$

$$2yx = -3y^2$$

$$x = \frac{-3y^2}{2y}$$

∴

$$x = -\frac{3}{2}y$$

what if

$$y = 0 \quad ?$$

$$y = 0 \quad y \neq 0$$

$$x = -\frac{3}{2}y$$