(問題１９)

$C_1: x^2 + y^2 = 25$

$C_2: (x-4)^2 + (y-3)^2 = 2$

の共有点を通る直線の方程式を求めよ。

(解答)

$f(x,y) = x^2 + y^2 - 25 = 0$ …①

$g(x,y) = (x-4)^2 + (y-3)^2 - 2 = 0$ …②とおく。

$$\begin{array}{rr} & x^2 + y^2 = 25 \\ -) & x^2 - 8x + 16 + y^2 - 6y + 9 = 2 \\ \hline & 8x - 16 + 6y - 9 = 23 \end{array}$$

$$8x + 6y = 16 + 9 + 23$$

$$8x + 6y = 48$$

$$4x + 3y = 24$$

$$y = -\frac{4}{3}x + 8$$

(答え) $y = -\frac{4}{3}x + 8$