

0606 週考詳解

一、填充題 A(每格 5 分，共 20 分)

1. 設圓 C 的圓心為 $O(-h, k)$ 、半徑為 $\frac{1}{r}$ ，則圓 C 的標準式為_____。Ans: $(x + h)^2 + (y - k)^2 = \frac{1}{r^2}$
2. 平面上與一定點等距離的所有點形成的圖形為_____。Ans: 圓
3. 設圓的一般式為 $x^2 + y^2 + dx + ey + f = 0$ ，則圓的形狀需透過判別式_____來決定。Ans: $d^2 + e^2 - 4f$
4. 不共線相異三點可以決定一個_____ (請完整回答)。Ans: 外接圓

二、填充題 B(每題 10 分，共 70 分)

二、填表B.

1. $(x-2)^2 + (y-5)^2 = 77$ ✖

2. $(x-3)^2 + (y-8)^2 = r^2$

$P(3, \sqrt{19}) \Rightarrow r^2 = (\sqrt{19}-8)^2$

$= 19 - 16\sqrt{19} + 64$

$= 85 - 16\sqrt{19}$

$\therefore (x-3)^2 + (y-8)^2 = 85 - 16\sqrt{19}$

✖

3. $x^2 + y^2 - 2x + 4y = \frac{8}{3}$

$(x-1)^2 + (y+2)^2 = \frac{8}{3} + 1 + 4$

$= \frac{17}{3}$

$\therefore O(1, -2) \quad r = \frac{\sqrt{51}}{3}$

✖

4. $x^2 + y^2 - 4kx + 6ky = 0$

$(x-2k)^2 + (y+3k)^2 = 4k^2 + 9k^2$

$= 13k^2 = 0$

$\therefore k^2 = 0$

$\therefore k = 0$ ✖

5.

$\therefore (-1) = (-1)$

$\therefore \frac{0}{1} = \frac{0}{1}$ ✖

6.

$AB = \sqrt{(14-2)^2 + (19-3)^2}$

$= \sqrt{12^2 + 16^2} = 20 = 2 \times 10$

$\therefore AB$ 是直径

$\therefore O(8, 11)$

$\therefore (x-8)^2 + (y-11)^2 = 100$

✖

7.

$x^2 + y^2 - 4x + 6y = 12$

$(x-2)^2 + (y+3)^2 = 12 + 4 + 9$

$= 25$

$\therefore O(2, -3) \quad r = 5$

$\therefore r' = 2r, \quad O(0, 0)$

$= 10$

$\therefore x^2 + y^2 = 100$ ✖

≡.

1.

proof: $\overline{MP} = \sqrt{(x-(-h))^2 + (y-(-k))^2} = r.$

$$\therefore \sqrt{(x+h)^2 + (y+k)^2} = r$$

$$\therefore C: (x+h)^2 + (y+k)^2 = r^2 \quad \diamond$$

2.

proof:

$$x^2 + y^2 + dx + ey + f = 0$$

$$\Rightarrow x^2 + dx + \frac{d^2}{4} + y^2 + ey + \frac{e^2}{4} = -f + \frac{d^2}{4} + \frac{e^2}{4}$$

$$\Rightarrow \left(x + \frac{d}{2}\right)^2 + \left(y + \frac{e}{2}\right)^2 = \frac{d^2 + e^2 - 4f}{4}$$

$$\therefore O\left(-\frac{d}{2}, -\frac{e}{2}\right) \quad r = \frac{\sqrt{d^2 + e^2 - 4f}}{2} \quad \diamond$$