

Kertausta ja tulevaan valmistautumista.

$$\gamma : t \mapsto (\sin 2t \cos t, \sin 2t \sin t) \quad t \in [0, 2\pi]$$

$$\begin{matrix} t & \gamma \\ \gamma & \gamma'(t) \\ t & \gamma(t) \cdot \gamma'(t) = 0 \end{matrix} \quad \cdot \quad \gamma(t)$$

$$(r(\theta), \theta)$$

$$f : (x, y) \mapsto \begin{cases} \frac{x^2 y}{x^2 + y^2} & (x, y) \neq (0, 0) \\ 0 & (x, y) = 0 \end{cases}$$

$$\mathbb{R}^2 \rightarrow \mathbb{R}$$

$$f \quad x \quad y$$

$$f \quad f$$

$$\{z \in \mathbb{C} \mid |z - 1| = |\bar{z} - 1|\}$$

$$\{z \in \mathbb{C} \mid |z| = 3|z - 1|\}$$

$$\{z \in \mathbb{C} \mid |z - i| < 2\}$$

$$\{z \in \mathbb{C} \mid |z - 1| = |z + i|\}$$

$$z = a + ib \in \mathbb{C} \quad a, b \in \mathbb{R} \quad |z|^2 = z\bar{z} = a^2 + b^2$$

$$m = a^2 + b^2 \quad n = c^2 + d^2$$

$$mn$$

$$a \quad b \quad c \quad d \\ e^2 + f^2$$

$$e \quad f$$

97000097

 $a^2 + b^2$ $a \quad b$ $a \quad b \quad c \quad d \in \mathbb{R}$

$$ac + bd \leq \sqrt{\frac{a^2 + b^2}{c^2 + d^2}}$$

 $\alpha \quad \beta$

$$|\alpha + \beta|^2 + |\alpha - \beta|^2 = 2(|\alpha|^2 + |\beta|^2).$$

 $\frac{\pi}{2}$ $z_1 \quad z_2$
 $z_1 \quad z_2 \quad z_1 + z_2$ $|z_1| = |z_2| = 1 \quad \arg z_1 = \frac{\pi}{4} \quad \arg z_2 =$
 $x + iy$

$$\tan \frac{3\pi}{8} = 1 + \sqrt{2}.$$

 z

$$|z| = 1 \quad \arg z = \theta \neq \pi$$

$$z - 1 = i \tan \frac{\theta}{2} (z + 1)$$

$$(a + ib)(\cos \theta + i \sin \theta)$$

$$b \cos \theta + a \sin \theta = \sqrt{a^2 + b^2} \sin(\theta + \arctan(b/a)).$$

$$\frac{d^n}{dt^n} e^{at} \sin bt = (a^2 + b^2)^{\frac{n}{2}} e^{at} \sin(bt + n \arctan(b/a)).$$