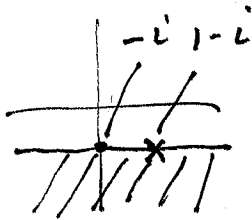
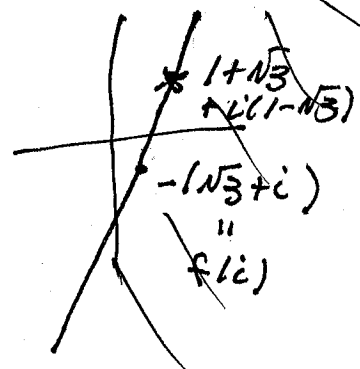


$$(1) \frac{3z + 2i}{z + 6}$$

(2)



$$1 + \sqrt{3}i = 2e^{i\pi/3}$$



$$(3) v(x, y) = \cosh x \sin y + 2xy$$

$$(4) \frac{-(x^2 + y^2) + 1}{x^2 + y^2 + 2y + 1} + i \frac{2x}{x^2 + y^2 + 2y + 1}$$

$$(5) h(x, y) = 5 - \frac{3}{\pi} \arg z$$

$$= 5 - \frac{3}{\pi} \operatorname{Arctan}\left(\frac{y}{x}\right)$$

with $-\pi \leq \operatorname{Arctan} \leq \pi$

$$(6) \int_0^{2\pi} \frac{d\theta}{1 + \frac{1}{2} \sin \theta} = \frac{2\pi}{\sqrt{1 - \frac{1}{4}}} = \frac{4\pi}{\sqrt{3}}$$

$$(7) T(x, y) = 5 - \frac{3}{\pi} \operatorname{Arctan}\left(\frac{2xy}{x^2 - y^2}\right)$$

$$(8) T(x, y) = 5 + \frac{5 \operatorname{Arctan} y/x}{\pi}$$

$$(9) T(x, y) = 5 - \frac{3}{\pi} \operatorname{Arctan}\left(\frac{1 - x^2 - y^2}{2y}\right)$$