

$$z^4 - 6z^2 + 25 = 0$$

$$z^2 = 3 + 4i$$

$$|w| = \sqrt{3^2 + 4^2} = 5$$

$$|z| = 2\sqrt{5}$$

$$k=0$$

$$\cos(h/2) = ?$$

$$\cosh = \frac{3}{5}$$

$$\frac{3}{5} = 2 \cos^2(h/2) - 1$$

$$\cos(h/2) = \sqrt{8/10} = 2/\sqrt{5}$$

$$\sin(h/2) = ?$$

$$\sinh = \frac{4}{5}$$

$$\frac{4}{5} = 2 \sin(h/2) \cdot 2/\sqrt{5}$$

$$\sin(h/2) = 1/\sqrt{5}$$

$$z_1 = \sqrt{5}(2/\sqrt{5} + i/\sqrt{5}) = 2 + i$$

$$k=1$$

$$\cos((h+2P)/2) = \cos(h/2+P) = -\cos(h/2) = -2/\sqrt{5}$$

$$\sin((h+2P)/2) = \sin(h/2+P) = -\sin(h/2) = -1/\sqrt{5}$$

$$z = \sqrt{5}(-2/\sqrt{5} - i/\sqrt{5}) = -2 - i$$

$$z^2 = 3 - 4i$$

$$|w| = 5$$

$$|z| = \sqrt{5}$$

при $k=0$

$$\sinh = -\frac{4}{5}$$

$$\sin(h/2) = -1/\sqrt{5}$$

$$\cosh = 3/5$$

$$\cos(h/2) = 2/\sqrt{5}$$

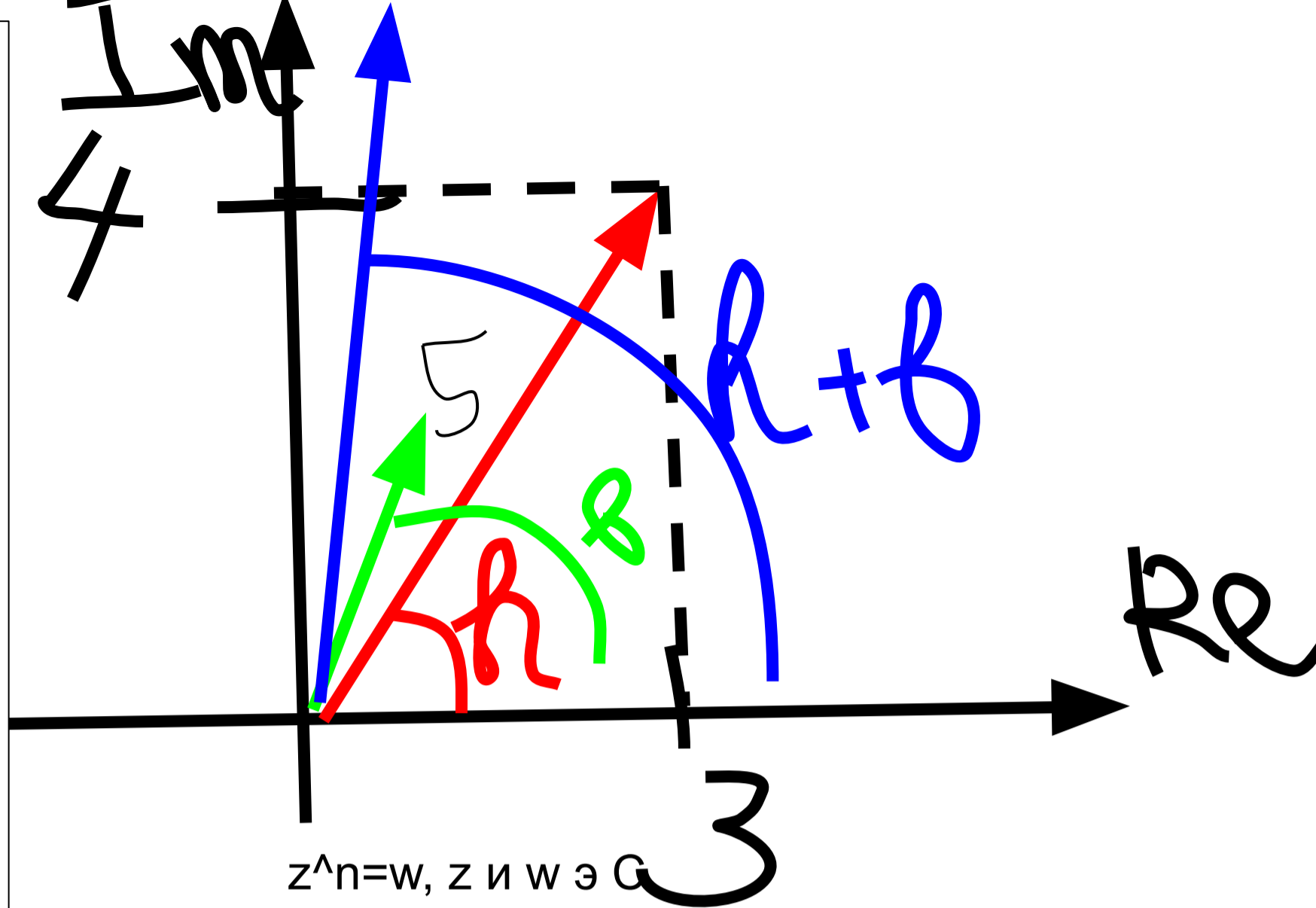
$$z = \sqrt{5}(2/\sqrt{5} - i/\sqrt{5}) = 2 - i$$

при $k=1$

$$\cos((h+2P)/2) = \cos(h/2+P) = -\cos(h/2) = -2/\sqrt{5}$$

$$\sin((h+2P)/2) = \sin(h/2+P) = -\sin(h/2) = 1/\sqrt{5}$$

$$z = \sqrt{5}(-2/\sqrt{5} + i/\sqrt{5}) = -2 + i$$



$$z^n = w, z \text{ и } w \in G$$

$$z = |z|(\cos\phi + i\sin\phi)$$

$$w = |w|(\cosh + i\sinh)$$

$$[|z|(\cos\phi + i\sin\phi)]^n = |w|(\cosh + i\sinh)$$

$$|z|^n [(\cos\phi + i\sin\phi)]^n = |w|(\cosh + i\sinh)$$

$$(\cos\phi + i\sin\phi)^2 = \cos^2\phi - \sin^2\phi + 2i\cos\phi\sin\phi = \cos^2\phi - \sin^2\phi + i\sin 2\phi = \cos 2\phi + i\sin 2\phi$$

$$(\cos y + i\sin y)(\cos x + i\sin x) = \cos y \cos x + i\sin x \cos y - \sin x \sin y + i\sin y \cos x = (\cos y \cos x - \sin x \sin y) + i(\sin y \cos x + \sin x \cos y) = \cos(y+x) + i\sin(x+y)$$

$$[(\cos\phi + i\sin\phi)]^n = \cos(n\phi) + i\sin(n\phi)$$

$$|z|^n (\cos(n\phi) + i\sin(n\phi)) = |w|(\cosh + i\sinh)$$

$$|z| = \sqrt[n]{|w|}$$

$$n\phi = h + 2Pk$$

$$\phi = (h + 2Pk)/n$$

$$k = 0; 1; \dots; n-1;$$

$$z = \sqrt[n]{|w|} (\cos((h+2Pk)/n) + i\sin((h+2Pk)/n))$$

$$\sinh = \frac{4}{5}$$

$$\cosh = \frac{3}{5}$$

$$|w| = \sqrt{3^2 + 4^2}$$

$$w = 3 + 4i = |w|(\frac{3}{5} + \frac{4}{5}i) = |w|(\cosh + i\sinh)$$