

$$3x(x^2 - 4x) + 2$$

$$3x^3 - 12x^2 + 2$$

$$\left. \begin{array}{l} 3x^3 - 12x^2 + 2 \\ 3(\sqrt{-1})^3 - 12(\sqrt{-1})^2 + 2 \end{array} \right\} x = \sqrt{-1}$$

$$3(\sqrt{-1})^3 + 12 + 2$$

$$3 \cdot \sqrt{-1} \cdot (\sqrt{-1})^2 + 14$$

$$-3 \cdot \sqrt{-1} + 14$$

$$-3 \cdot x + 14$$

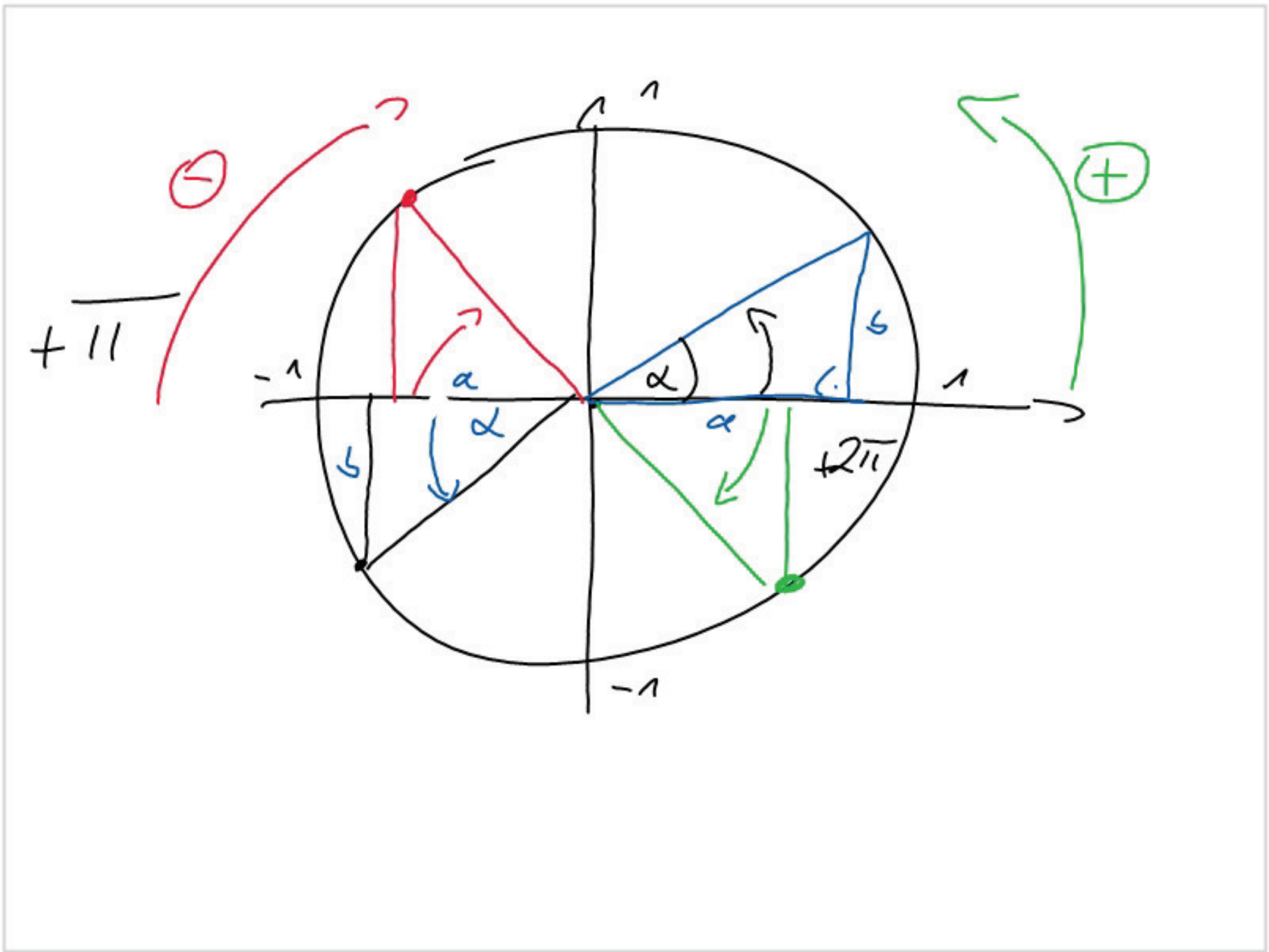
$$\left. \begin{array}{l} -3 \cdot \sqrt{-1} + 14 \\ -3 \cdot x + 14 \end{array} \right\} \sqrt{-1} = x$$

$$z = (4i - 2) \cdot 3i^2 + 4 \cdot (2i - 7)$$

$$\left. \begin{array}{l} 12i^3 - 6i^2 + 8i - 28 \\ 12\sqrt{-1} \cdot (\sqrt{-1})^2 - 6 \cdot (\sqrt{-1})^2 + 8 \cdot \sqrt{-1} - 28 \end{array} \right\} i = \sqrt{-1}$$

$$-12 \cdot \sqrt{-1} + 6 + 8 \cdot \sqrt{-1} - 28$$

$$\left. \begin{array}{l} -22 - 4 \cdot \sqrt{-1} \\ -22 - 4i \end{array} \right\} \sqrt{-1} = i$$



$$1) (3i-4)(2+i) - (3+2i)(4i-3) = z$$

$$6i + 3i^2 - 8 - 4i - [12i - 9 + 8i^2 - 6i]$$

$$\underline{6i} + 3i^2 - 8 - 4i - \underline{12i} + 9 - 8i^2 + \underline{6i}$$

$$-4i - 3 - 8 + 9 + 8 = 6 - 4i$$

$$r = \sqrt{6^2 + 4^2} = \sqrt{52} ; \alpha = \arctan(-\frac{2}{3}) + 2\pi$$



$$2) 4i^2(3i^3 - 7) + 2i^2(5i - 2)(3 - 2i) = z$$

$$12i^5 - 28i^2 - 2 \cdot [15i - 10i^2 - 6 + 4i]$$

$$12i^5 - 28i^2 - 30i + 20i^2 + 12 - 8i$$

$$\underline{12} \cdot i^4 \cdot i + \underline{28} - \underline{30i} - \underline{20} + \underline{12} - \underline{8i}$$

$$z = 20 - 26i$$

$$r = \sqrt{20^2 + 26^2}$$

$$\alpha = \arctan(-\frac{13}{10}) + 2\pi$$

$$\sqrt{\underbrace{49+25}_{144}} = 7+5 = 12$$

$$\frac{5i-3}{2i+1} \cdot \frac{2i-1}{2i-1}$$

$(a+b)$ $(a-b)$

$$\frac{5i-3}{10} = \frac{5}{10}i - \frac{3}{10}$$

$$(2i+1)^2 = (2i)^2 + 4i + 1 = -3 + 4i$$

$$\frac{(5i-3) \cdot (2i-1)}{(2i)^2 - 1^2} = \frac{10i^2 - 5i - 6i + 3}{-4 - 1}$$

$a^2 - b^2$

$$= \frac{-7 - 11i}{-5} = \frac{7}{5} + \frac{11}{5}i$$

$$= 1,4 + 2,2i$$

$$\frac{2i-5}{i+2} - \frac{3i-2}{3i+1} = \frac{16-18i}{-10} - \frac{-7-9i}{-10} *$$

$$\begin{aligned} \frac{2i-5}{i+2} \cdot \frac{i-2}{i-2} &= \frac{(2i-5)(i-2)}{i^2-2^2} = \frac{2i^2-4i-5i+10}{-5} \\ &= \frac{8-9i}{-5} \end{aligned}$$

$$\begin{aligned} \frac{3i-2}{3i+1} \cdot \frac{3i-1}{3i-1} &= \frac{(3i-2)(3i-1)}{(3i)^2-1^2} = \frac{9i^2-3i-6i+2}{-10} \\ &= \frac{-7-9i}{-10} * \quad \frac{23-9i}{-10} = -2.3+0.9i \end{aligned}$$