S47 6) $\left(\frac{\sqrt[2x]{h^{3x-2}}}{\sqrt[2x]{h^{4x-4}}} \cdot \left(\sqrt[2x]{h} \right)^{5x-2} \right)^3$

$\left(h^{\frac{1}{2x}}\right)^{5x-2}$ $h^{\frac{1}{2x}\cdot(5x-2)}$

4) $\sqrt{\frac{y^{-2}(x\cdot z^3)^{-5}}{x^{-3}\cdot y^4 \cdot z^7}}$ S62. Nr. 1)

6) $\left(\frac{h^{\frac{3x-2}{2x}}}{h^{\frac{4x-4}{2x}}} \cdot h^{\frac{5x-2}{2x}} \right)^3 = h^{3\cdot\left[\frac{(3x-2)-(4x-4)+(5x-2)}{2x}\right]}$

$= h^{\frac{12x}{2x}} = h^6$

4) $\left(\frac{x^{-5} z^{15} x^3}{y^2 y^4 z^7} \right)^{1/2} = \left(\frac{x^{-2} z^8}{y^6} \right)^{1/2} = \frac{x^{-1} z^4}{y^3}$

62) 1) $\log x^3 - \log\left(\frac{2}{x}\right)^4 - \log\left((x^2)^6\right)^{1/3} = \log 27^{2/3} + \log(x^4)^{1/2} - \log 6^2$

$$\log \frac{x^3}{\left(\frac{2}{x}\right)^4 (x^{12})^{1/3}} = \log \frac{27^{2/3}(x^4)^{1/2}}{6^2} \quad | \, 10^x$$

$$\frac{x^3}{\frac{2^4}{x^4} \cdot x^4} = \frac{3^2 x^1}{6^2} \quad | \cdot 2^4 : x^2$$

$$\frac{x^3}{x^2} = \frac{9 \cdot 16}{36} \iff x = 4$$

$$(a \pm s)^2 = a^2 \pm 2as + s^2$$

$$x^2 - 3x - 10 = 0$$

$$(x - 3/2)^2 - 9/4 - 10 = 0$$

$$\rightarrow x^2 - 3x + 9/4$$

$$\rightarrow (x - 3/2)^2 - 49/4 = 0 \quad | + 49/4$$

$$(x - 3/2)^2 = 49/4 \quad | \sqrt{}$$

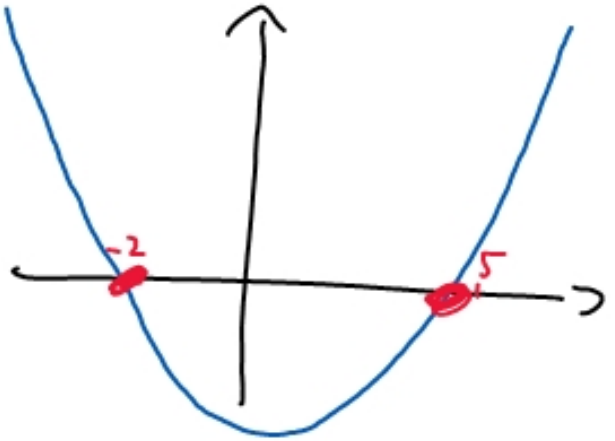
$$x - 3/2 = \pm \sqrt{49/4} = \pm 7/2 \quad | + 3/2$$

$$x_1 = 7/2 + 3/2 = 5$$

$$x_2 = -7/2 + 3/2 = -2$$

$$x^2 - 3x - 10$$

$$(x - 5)(x + 2)$$



$$x^2 + p \cdot x + q$$

$$(x+a) \cdot (x+s)$$

$$x^2 + ax + sx + a \cdot s$$

$$x^2 + (a+s) \cdot x + a \cdot s$$

($a+s$ = p, $a \cdot s$ = q)

$$x^2 - 2x - 24 = 0$$

$$(x+4)(x-6)$$

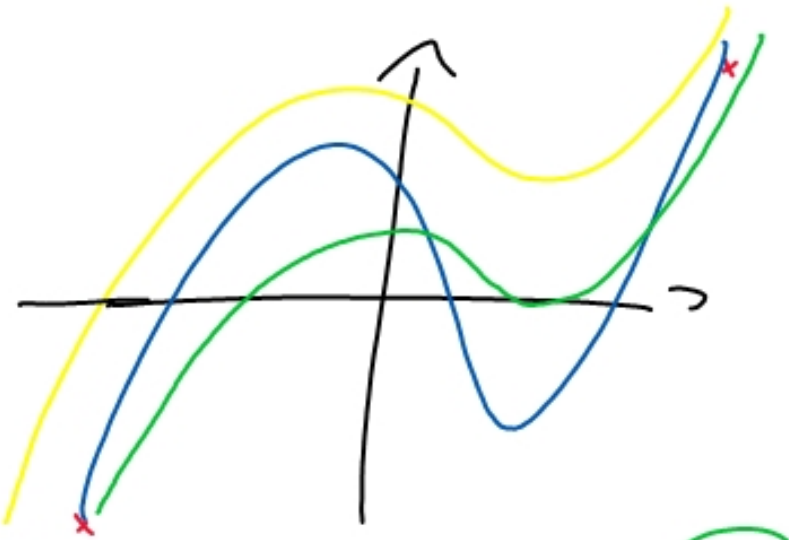
$$x^2 + 5x + 6$$

$$(x+2)(x+3)$$

$f(x) = x^3 + 4x^2 - 7x - 10$

$\mathbb{D} = x \in \mathbb{R}$

$f(x) = (x+4)(x+5)\cdot(x+2)$



$M_{-10} = \{\pm 1; \pm 2; \pm 5; \pm 10\}$

$f(1) = 1 + 4 - 7 - 10 \neq 0$

$f(-1) = -1 + 4 + 7 - 10 = 0 \Rightarrow (x+1)$

$(x^3 + 4x^2 - 7x - 10) : (x+1) = x^2 + 3x - 10$

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

$3x^2 - 7x - 10$

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

$-10x - 10$

$-(-10x - 10)$

$(x+5)(x-2)$

$23151 : 11 = 21$

-22

1151

-11

...

$f(x) = (x+1)(x+5)(x-2)$

$\mathbb{L} = \{-5; -1; 2\}$

$f(x) = x^3 - x^2 - 22x + 40$

$f(1) = 18 \neq 0$

$f(-1) \neq 0$

$f(2) = 0 \rightarrow (x-2)$

$(x^3 - x^2 - 22x + 40) : (x-2) = x^2 + x - 20$

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

$x^2 - 22x + 40$

$-(x^2 - 2x)$

$-20x + 40$

$-(-20x + 40)$

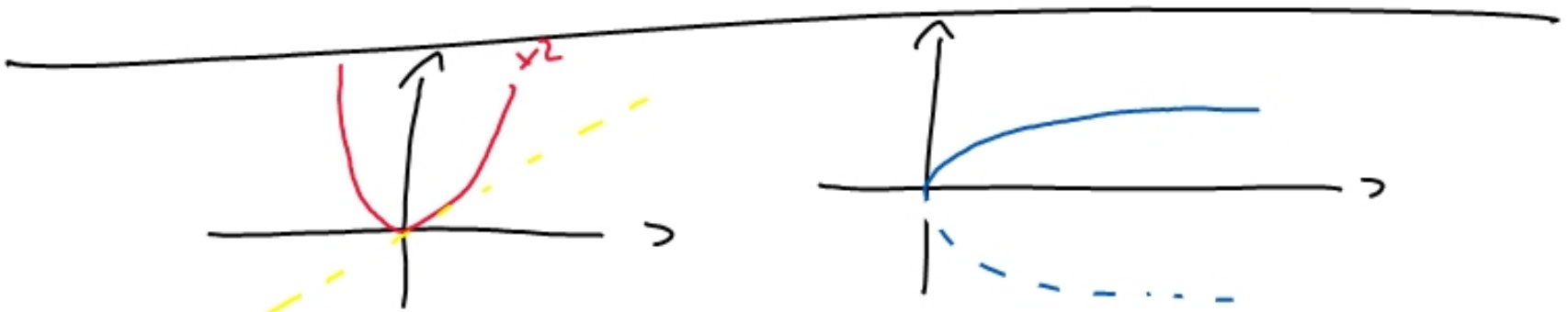
$0 \quad 0$

$x^2 + x - 20$

$(x+5)(x-4)$

$f(x) = (x-2)(x+5)(x-4)$

$f(x) = 0 \Rightarrow L = \{-5; 2; 4\}$



$a^x = b \qquad x = \log_a b$

$0{,}97^x < 0{,}5 \qquad | \cdot \log$

$\left(x < \log_{0{,}97} 0{,}5 \right)$

$\log 0{,}97^x < \log 0{,}5$

$x \cdot \log 0{,}97 < \log 0{,}5 \qquad | : \log 0{,}97 < 0$

$x > \log 0{,}5 / \log 0{,}97$

Potenza

$$x^{a} \quad ; \quad a \in \mathbb{Q}$$

$$x^{-a} = 1/x^{a}$$

$$x^{1/a} = \sqrt[a]{x}$$

POT

Esponenziale

$$a^{x} = S \quad ; \quad a \in \mathbb{Q}$$

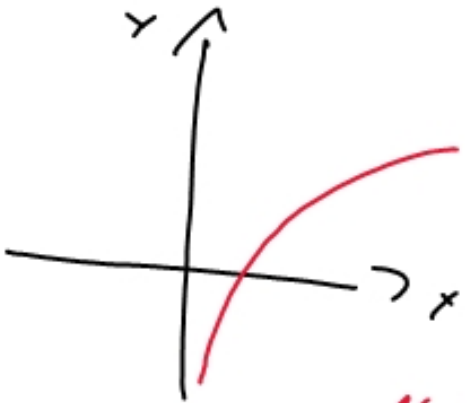
$f(x) = e^{x}$

$D = x \in \mathbb{R}$

$I = y \in \mathbb{R}^{+}$

Logaritmi

$$x = \log_a S$$



LOG

$f(x) = \ln(x)$

$D = x \in \mathbb{R}^{+}$

$I = y \in \mathbb{R}$