

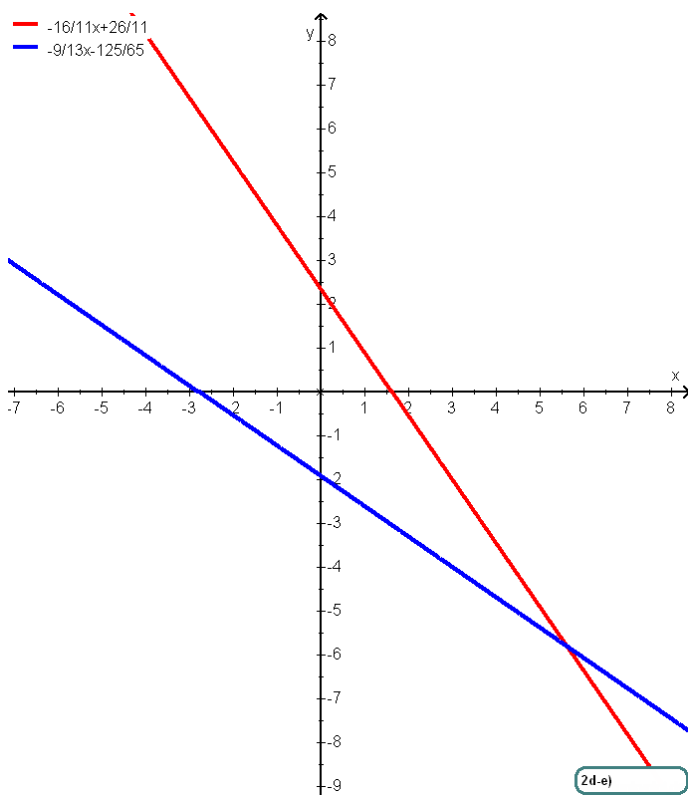
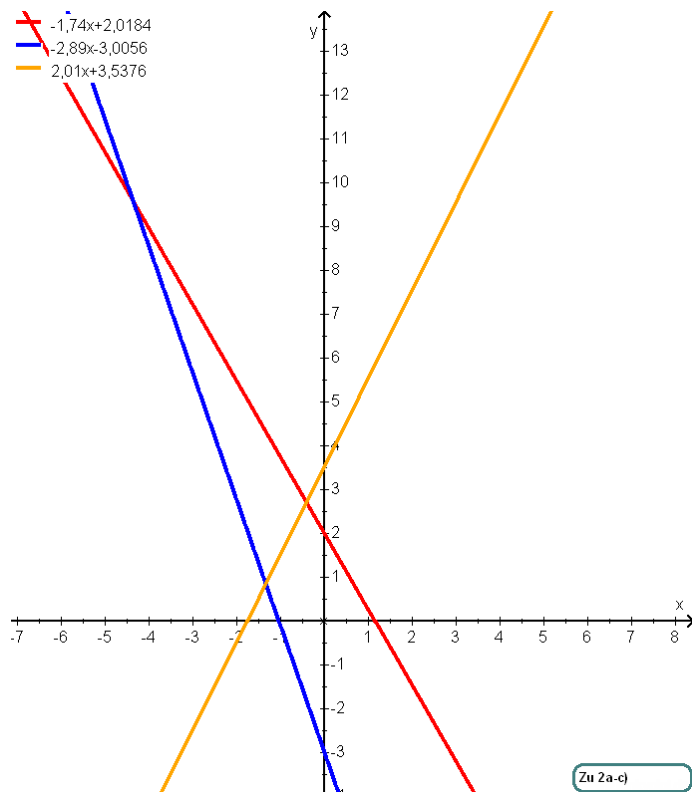
## Lösungen:

<b>1</b>	<p>Bitte lösen Sie die Gleichungssysteme</p> <p>a)</p> $-\frac{3}{5}c - \frac{1}{3}o + \frac{9}{4}g = \frac{85}{8}$ $\frac{3}{4}c + \frac{2}{1}o - \frac{3}{5}g = -\frac{19}{4}$ $\frac{5}{6}c + \frac{5}{4}o + \frac{1}{2}g = \frac{61}{72}$ <p style="text-align: center;">L :</p> $c = -\frac{1}{3};$ $o = -\frac{9}{10};$ $g = \frac{9}{2};$ <p>b)</p> $\frac{2}{7}t + \frac{1}{3}p + \frac{6}{7}r = \frac{67}{126}$ $-\frac{9}{11}t - \frac{5}{6}p - \frac{4}{3}r = -\frac{5}{4}$ $-t + \frac{3}{2}p + \frac{7}{4}r = -\frac{5}{2}$ <p style="text-align: center;">L :</p> $t = \frac{11}{6};$ $p = -\frac{5}{6};$ $r = \frac{1}{3}$ <p>c)</p> $4(10r + 8h) - 2(11r + 7i) - 4(-6h - 12i) + 6 = -190$ $-10(-7r - 7h) - 8(-9r + 4i) - 12(5h - 12i) + 2 = -800$ $-(12r + 7h) + 4(7r + 9i) + 7(6h + 11i) - 11 = -336$ <p style="text-align: center;">L:</p> $r = -4;$ $h = -1;$ $i = -2;$ <p>d)</p> $-8,4h + 3,4b - 8,2t = -22,58$ $-6,6h - 10,2b - 7,5t = -137,16$ $-1,7h + 5b - 1,7t = 33,62$ <p style="text-align: center;">L:</p> $h = 1,8;$ $b = 8,9;$ $t = 4,6;$
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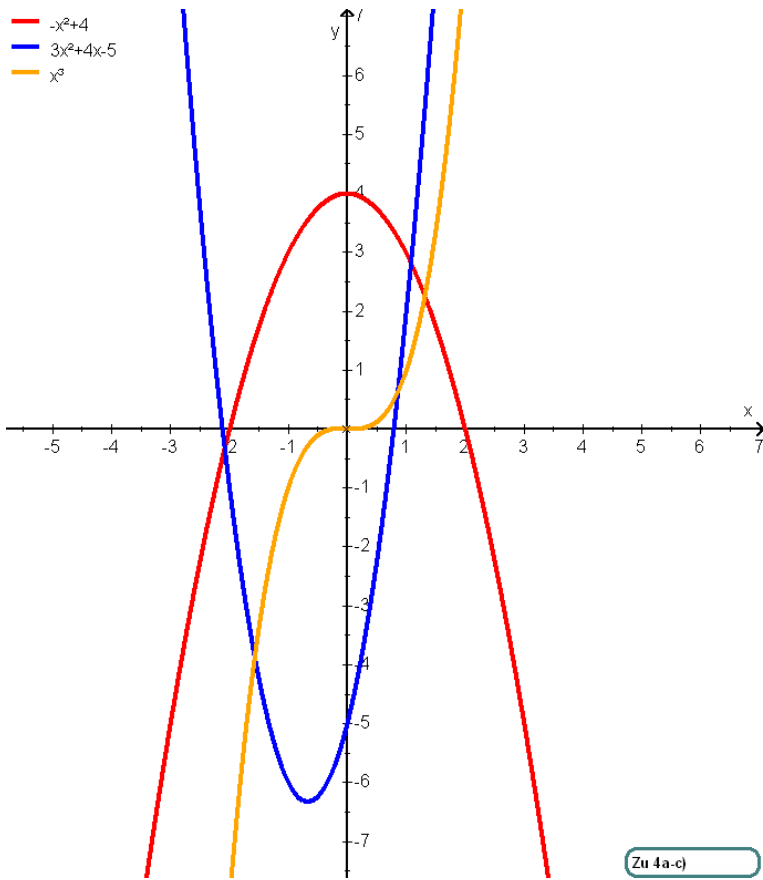
<p><b>2</b></p>	<p>Bitte bestimmen Sie die Achsenschnittstellen folgender Funktionen. Bitte zeichnen Sie die Funktionen</p> <p>a) <math>f(x) = -1,74x + 2,0184</math>   L: <math>x_{N1} = 1,16;</math> <math>y_s = 2,0184;</math>  b) <math>f(x) = -2,89x - 3,0056</math>   L: <math>x_{N1} = -1,04;</math> <math>y_s = -3,0056;</math>  c) <math>f(x) = 2,01x + 3,5376</math>   L: <math>x_{N1} = -1,76;</math> <math>y_s = 3,5376;</math></p> <p>d) <math>f(x) = -\frac{16}{11}x + \frac{26}{11}</math>   L: <math>x_{N1} = \frac{13}{8}</math> <math>y_s = \frac{26}{11}</math>  e) <math>f(x) = -\frac{9}{13}x - \frac{126}{65}</math>   L: <math>x_{N1} = -\frac{14}{5}</math> <math>y_s = -\frac{126}{65}</math></p>
<p><b>3</b></p>	<p>Bitte nennen Sie die Schnittstellenbedingungen für Funktionen</p> <p>- Schnittstelle mit der x-Achse: <math>y = 0</math>  - Schnittstelle mit der y-Achse: <math>x = 0</math>  - Schnittstelle zweier Funktionen f, g: <math>f(x) = g(x)</math></p>
<p><b>4</b></p>	<p>Bitte zeichnen Sie folgende Funktionen</p> <p>a) <math>f(x) = -x^2 + 4</math>  b) <math>f(x) = 3x^2 + 4x - 5</math>  c) <math>f(x) = x^3</math>  d) <math>f(x) = \frac{1}{x^2+1}</math>  e) <math>f(x) = 2x + \sqrt{0,5x^2 + 2}</math></p>

5	Skizzieren Sie die Funktionen, für die folgendes gilt																																																																																																							
	a) $f(x) = 2^x$ ; $f(-1,2) = 0,4353$ $f(0,8) = 1,7411$ $f(-2,8) = 0,1436$ $f(2,6) = 6,0629$ $f(-3,4) = 0,0947$ $f(3,2) = 9,1896$ $f(-0,4) = 0,7579$ $f(-2,2) = 0,2176$ $f(3) = 8$ $f(2,8) = 6,9644$ $f(-4,6) = 0,0412$ $f(4,8) = 27,8576$ $f(-4) = 0,0625$ $f(-3,2) = 0,1088$ $f(-4,8) = 0,0359$	b) $f(x) = -2,4x+2$ ; $f(-1,8) = 6,32$ $f(1,2) = -0,88$ $f(3,4) = -6,16$ $f(-1,2) = 4,88$ $f(3,8) = -7,12$ $f(-5) = 14$ $f(4) = -7,6$ $f(4,4) = -8,56$ $f(1,8) = -2,32$ $f(-0,8) = 3,92$ $f(3,6) = -6,64$ $f(-4,4) = 12,56$ $f(-3,8) = 11,12$ $f(1,6) = -1,84$ $f(2,8) = -4,72$	c) $f(x) = ;3 - \sqrt{9 - x^2}$ $f(4,4) = \text{n.d.}$ $f(4,6) = \text{n.d.}$ $f(-5) = \text{n.d.}$ $f(-0,2) = 0,0067$ $f(-2,8) = 1,923$ $f(-4,6) = \text{n.d.}$ $f(-2) = 0,7639$ $f(-0,4) = 0,0268$ $f(1,6) = 0,4623$ $f(-0,8) = 0,1086$ $f(-2,4) = 1,2$ $f(1) = 0,1716$ $f(0,8) = 0,1086$ $f(-2,6) = 1,5033$ $f(4,8) = \text{n.d.}$																																																																																																					
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	a) $f(x) = x^2 \sqrt{4 + x^2}$ (-2; 11,3137) (-0,4; 0,3263) (1,2; 3,3586) (-0,8; 1,3786) (-1; 2,2361) (-1,6; 6,5568) (0,8; 1,3786) (0,2; 0,0804) (1; 2,2361) (-0,6; 0,7517) (1,8; 8,7179) (-0,2; 0,0804) (0,4; 0,3263) (-1,8; 8,7179) (2; 11,3137)	b) $f(x) = \text{zufällige Werte}$ (2; 0,4026) (0,8; 2,9517) (-0,4; 2,6762) (0,2; 1,3918) (2; 0,477) (2; 2,5243) (-1; -1,9263) (-0,4; -0,302) (-0,4; 0,7169) (1,4; -0,9544) (1,4; -1,1601) (0,8; 0,882) (0,6; 2,6438) (-1,4; 2,2622) (-1,8; 2,5109)	c) $f(x) = \cos(x+0,5)$ (-0,2; 0,9553) (-3,2; -0,9041) (-2,4; -0,3233) (-4,8; -0,4008) (1,6; -0,5048) (3,8; -0,4008) (-1,6; 0,4536) (3; -0,9365) (4,2; -0,0124) (0; 0,8776) (4; -0,2108) (-1,2; 0,7648) (2,6; -0,9991) (4,4; 0,1865) (2,4; -0,971)																																																																																																					
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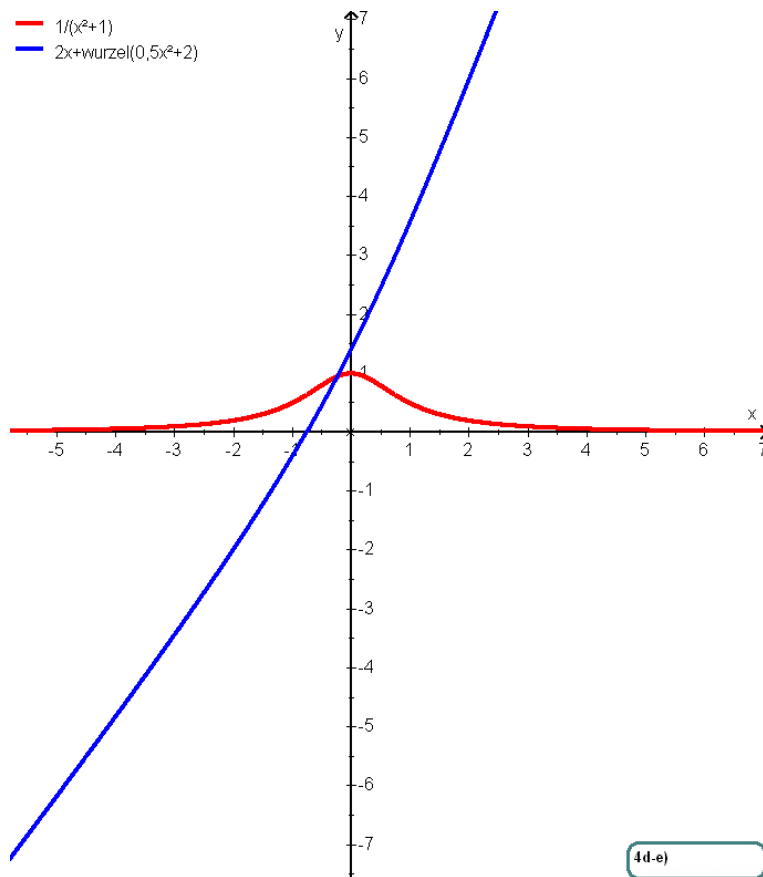
zu 2)



Zu 4)

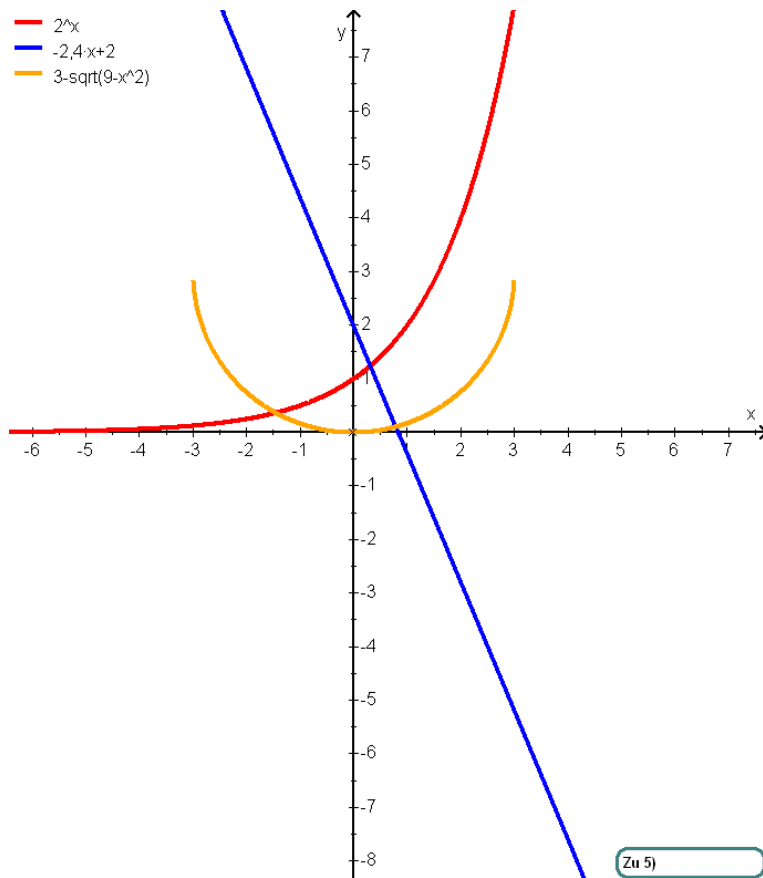


Zu 4a-c)

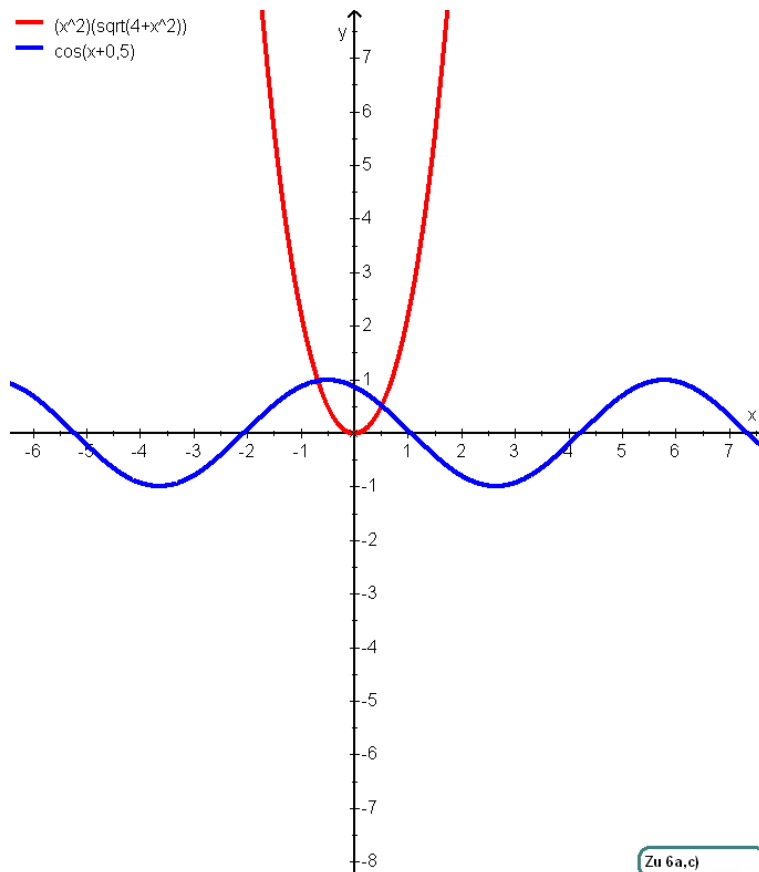


4d-e)

zu 5)



Zu 6)



Zu 7)

- $-0,5\text{abs}(x)$
- $-x^3+4\cdot x$
- $1,5+\ln(x+2)$

