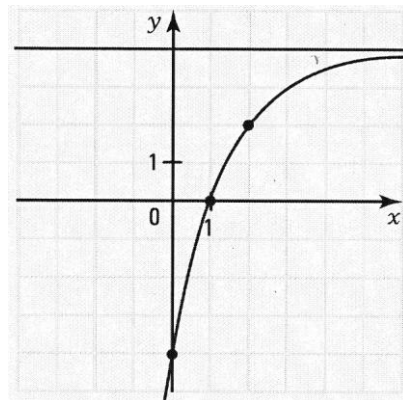


1. a)

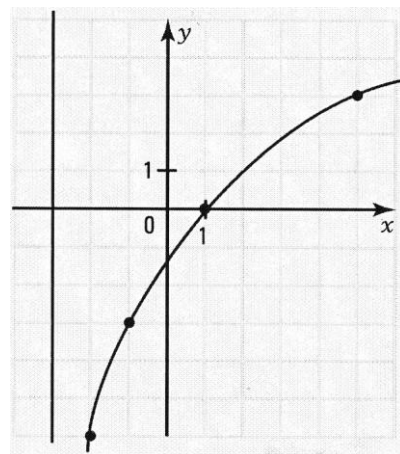
x	-1	0	1	2	3	4
y	-12	-4	0	2	3	3.5



- b)
1. Dom: \mathbb{R}
 2. Ran: $]-\infty, 4[$
 3. 1
 4. Positive: $[1, +\infty[$
Negative: $]-\infty, 1[$
 5. Increasing over \mathbb{R}
 6. -4
 7. $y = 4$

2. a)

x	-2.5	-2	-1	1	5	13
y	-9	-6	-3	0	3	6



- b)
1. Dom: $]-3, +\infty[$
 2. Ran: \mathbb{R}
 3. 1
 4. Positive: $[1, +\infty[$
Negative: $]-3, 1]$
 5. Increasing over $]-3, +\infty[$
 6. ≈ -1.245
 7. $x = -3$

3. a) \mathbb{R} b) $\left] \frac{1}{2}, +\infty \right[$
c) $] -\infty, 3[$ d) $] -\infty, -3[\cup] 3, +\infty[$

4. a) $x = 3$ b) $x \approx 0.43$ c) \emptyset
d) $x = 4$ e) $x = \frac{1}{9}$ f) $x \approx 3.52$

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5. a) $x = 4$ b) $x = 2$
c) $x \approx 4.42$ d) $x = 0$ or $x \approx -0.43$

6. a) $y = -4$ b) $x = 3$

7. a) Ran: $] -\infty, 5[$ b) Ran: \mathbb{R}

8. a) ≈ 2.63 b) $\frac{7}{2}$

9. a) Positive: $] -\infty, 5]$ b) Positive: $] 2, 4]$
Negative: $[5, +\infty[$ Negative: $[4, +\infty[$

10. a) Increasing over \mathbb{R} b) Decreasing over $\left] -\infty, \frac{1}{2} \right[$

11. a) $y = \frac{1}{2} \log_3 \left(-\frac{1}{2}(x-4) \right) + 1$ b) $y = \frac{1}{3} 2^{\frac{1}{5}(x+10)} + 1$

12. $y = -3(2)^x + 1$

13. $y = \log_3(x-1) + 1$

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14. a) $2x + y + z$ b) $3x + 2y - 2z$

15. a) 12 b) 1
16. a) $\log \frac{3}{4}$
- b) $\ln x^2$
- c) $\log \left(\frac{x+1}{x-2} \right)$
- d) $\ln \left(\frac{2x+1}{x-2} \right)$
17. a) $y = 12(2)^{\frac{t}{3}}$
- b) 27 days
18. a) \$3372.13
- b) ≈ 8.84 years
19. a) 1. ≈ 2766 2. ≈ 2170
- b) 2034
20. ≈ 78