



ÖVNINGAR PÅ EXPONENTIALFUNKTIONER

EUROPASKOLAN
STRÄNGNÄS

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Här finns ett antal grafer till några exponentialfunktioner och ett antal grafer. Öva på att rita grafen till funktionen samt på att bestämma ekvationen för en graf.

Ledning: En exponentialfunktion kan skrivas på formen $y(x) = C \cdot a^x + d$. Bestäm d och C direkt ur grafen. Identifiera sedan halverings- eller fördubblingsintervallet h . Då gäller $a = \left(\frac{1}{2}\right)^h$.

Du kan också identifiera två punkter (x_1, y_1) och (x_2, y_2) på kurvan och lösa ekvationssystemet

$$\begin{cases} y_1 = C a^{x_1} \\ y_2 = C a^{x_2} \end{cases}$$

med avseende på C och a .

- | | | |
|-----------------------------------|-------------------------------|-------------------------------|
| 1. a) $y = 6 \cdot 0.841^x - 6$ | b) $y = -1 \cdot 1.189^x + 0$ | c) $y = -8 \cdot 0.871^x - 7$ |
| 2. a) $y = -8 \cdot 1.260^x + 4$ | b) $y = 8 \cdot 0.871^x - 5$ | c) $y = 1 \cdot 0.871^x - 8$ |
| 3. a) $y = -1 \cdot 0.500^x - 5$ | b) $y = -5 \cdot 0.707^x - 1$ | c) $y = -4 \cdot 2.000^x - 1$ |
| 4. a) $y = 2 \cdot 2.000^x + 1$ | b) $y = -6 \cdot 1.414^x + 6$ | c) $y = 7 \cdot 1.260^x + 4$ |
| 5. a) $y = -3 \cdot 1.260^x + 3$ | b) $y = 2 \cdot 0.500^x + 6$ | c) $y = -1 \cdot 2.000^x + 5$ |
| 6. a) $y = 3 \cdot 0.707^x + 3$ | b) $y = 5 \cdot 0.794^x + 0$ | c) $y = -8 \cdot 2.000^x + 0$ |
| 7. a) $y = 2 \cdot 0.707^x + 8$ | b) $y = 8 \cdot 1.189^x + 0$ | c) $y = -5 \cdot 1.260^x + 6$ |
| 8. a) $y = -1 \cdot 1.414^x + 1$ | b) $y = -8 \cdot 1.189^x + 8$ | c) $y = 4 \cdot 1.149^x + 7$ |
| 9. a) $y = -1 \cdot 2.000^x + 1$ | b) $y = -5 \cdot 0.794^x + 1$ | c) $y = -3 \cdot 1.260^x - 2$ |
| 10. a) $y = -1 \cdot 0.500^x + 2$ | b) $y = 1 \cdot 1.149^x - 5$ | c) $y = 5 \cdot 1.414^x + 5$ |
| 11. a) $y = -7 \cdot 0.500^x + 3$ | b) $y = -4 \cdot 2.000^x + 4$ | c) $y = -7 \cdot 2.000^x - 3$ |
| 12. a) $y = -4 \cdot 0.841^x - 6$ | b) $y = -8 \cdot 0.707^x - 3$ | c) $y = -7 \cdot 1.149^x - 5$ |
| 13. a) $y = 2 \cdot 0.871^x - 5$ | b) $y = -6 \cdot 0.841^x - 8$ | c) $y = 3 \cdot 0.794^x + 3$ |
| 14. a) $y = 5 \cdot 0.794^x + 8$ | b) $y = -2 \cdot 0.794^x + 3$ | c) $y = -8 \cdot 1.414^x + 2$ |
| 15. a) $y = -3 \cdot 0.871^x + 6$ | b) $y = 4 \cdot 0.794^x + 7$ | c) $y = 6 \cdot 2.000^x - 8$ |
| 16. a) $y = 1 \cdot 2.000^x + 8$ | b) $y = 3 \cdot 0.794^x + 8$ | c) $y = -5 \cdot 0.841^x - 3$ |
| 17. a) $y = -7 \cdot 0.841^x - 5$ | b) $y = -3 \cdot 1.149^x + 0$ | c) $y = -5 \cdot 1.414^x - 8$ |
| 18. a) $y = -3 \cdot 1.414^x + 5$ | b) $y = 7 \cdot 1.414^x + 6$ | c) $y = 8 \cdot 1.414^x + 3$ |

19. a) $y = -6 \cdot 0.871^x - 7$

b) $y = 2 \cdot 0.871^x + 4$

c) $y = -4 \cdot 1.149^x - 3$

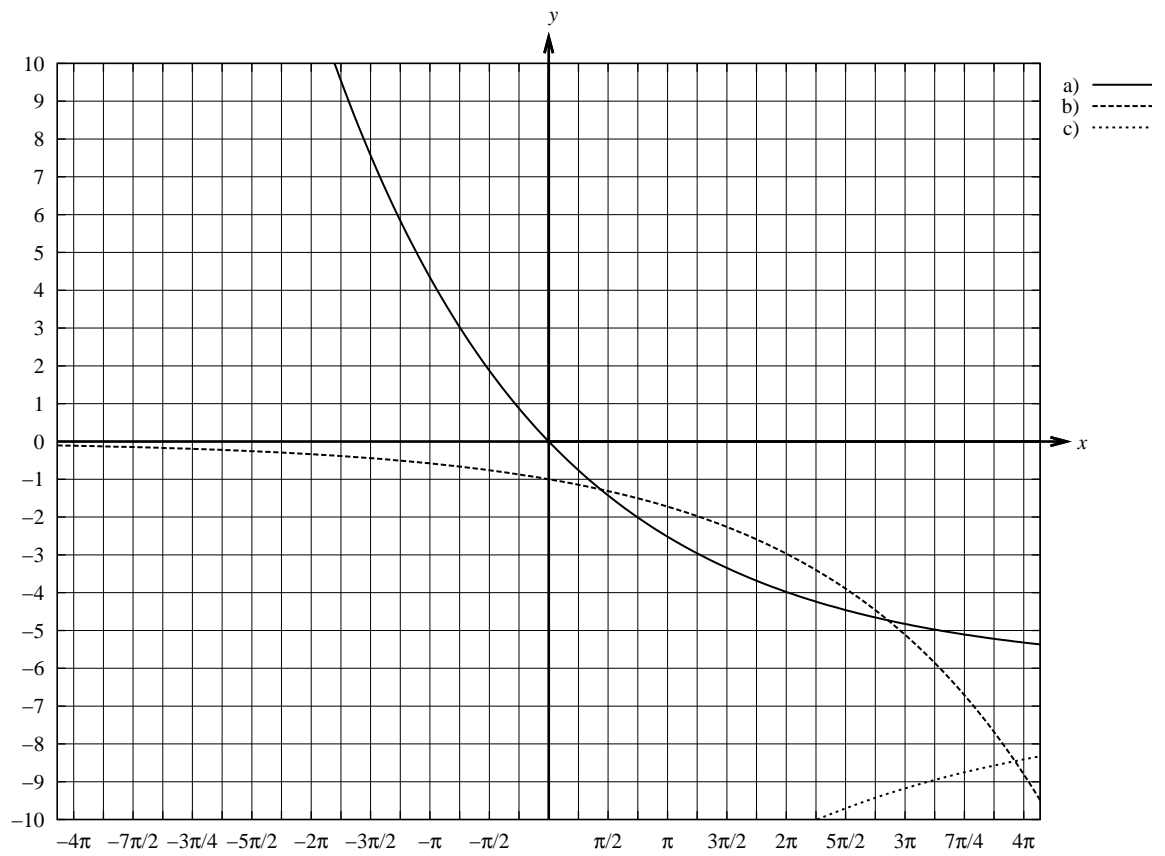
20. a) $y = 7 \cdot 2.000^x + 8$

b) $y = -8 \cdot 2.000^x - 7$

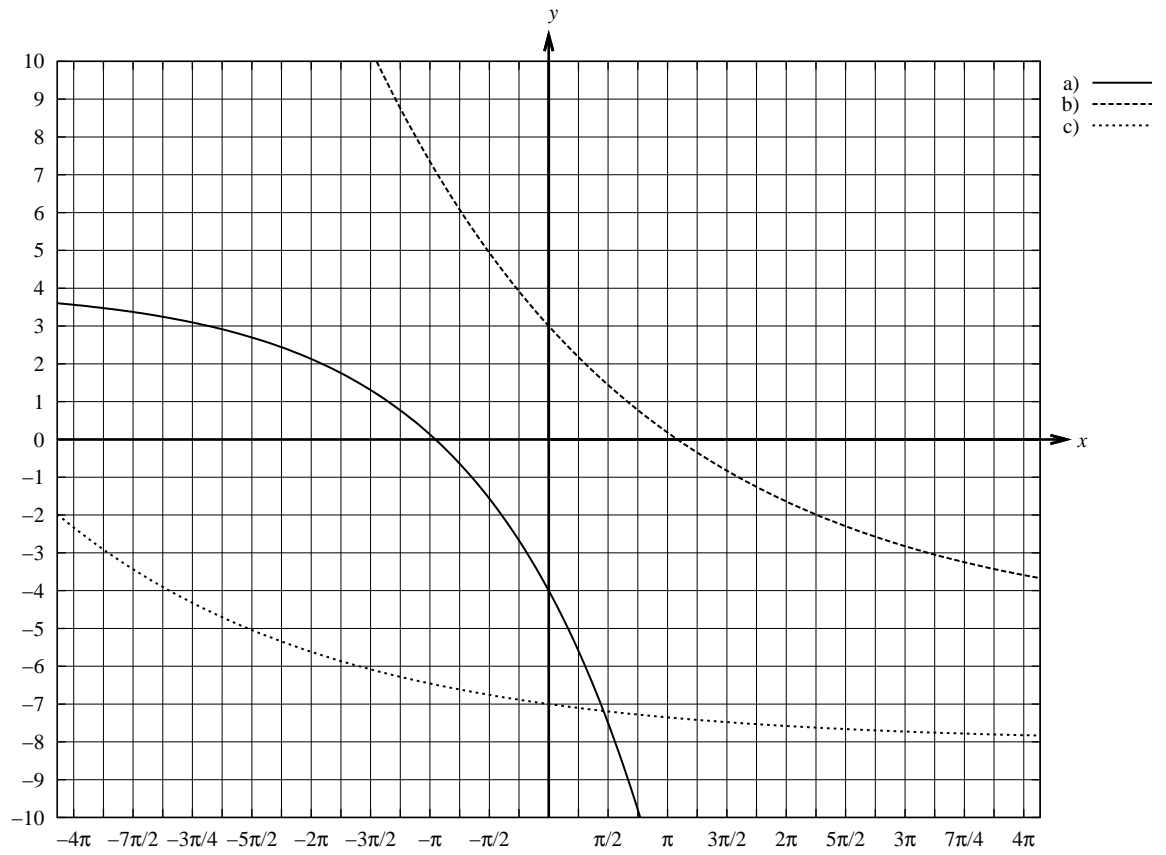
c) $y = 6 \cdot 1.414^x + 5$

Grafer:

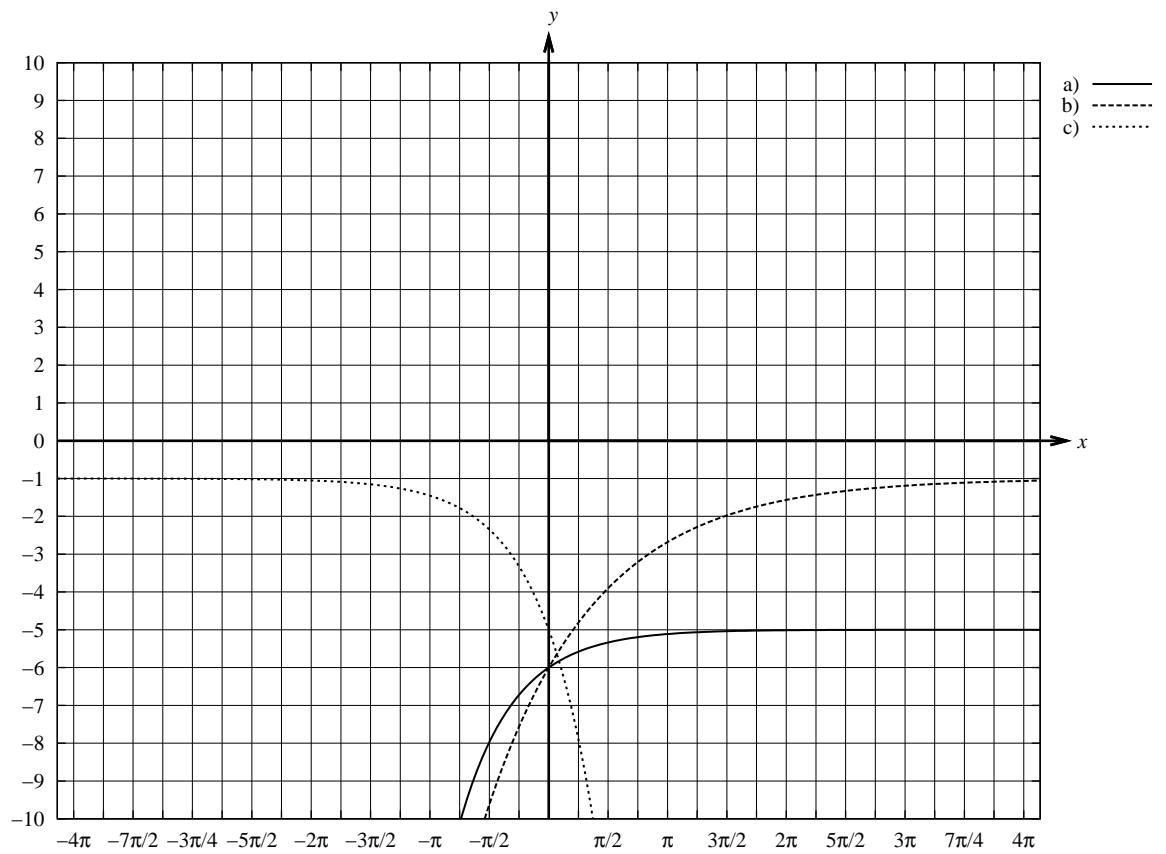
1. a) b) c)



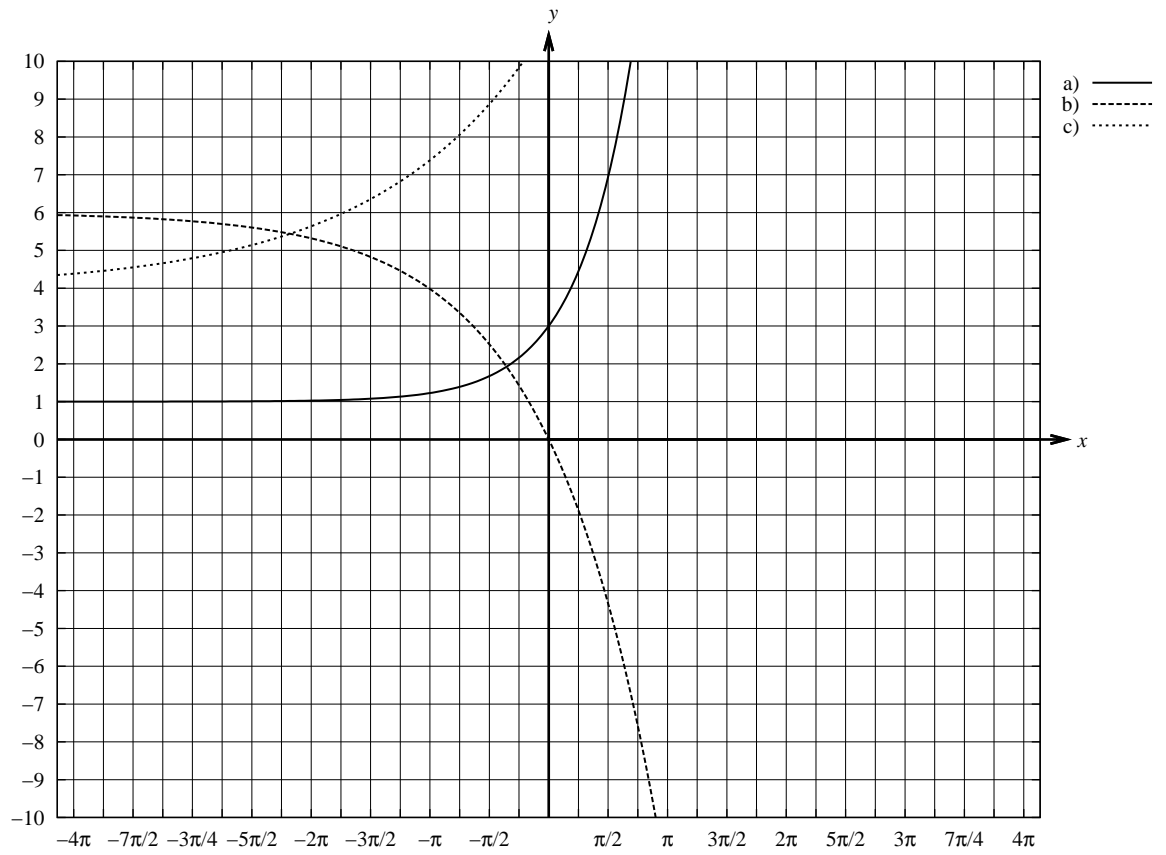
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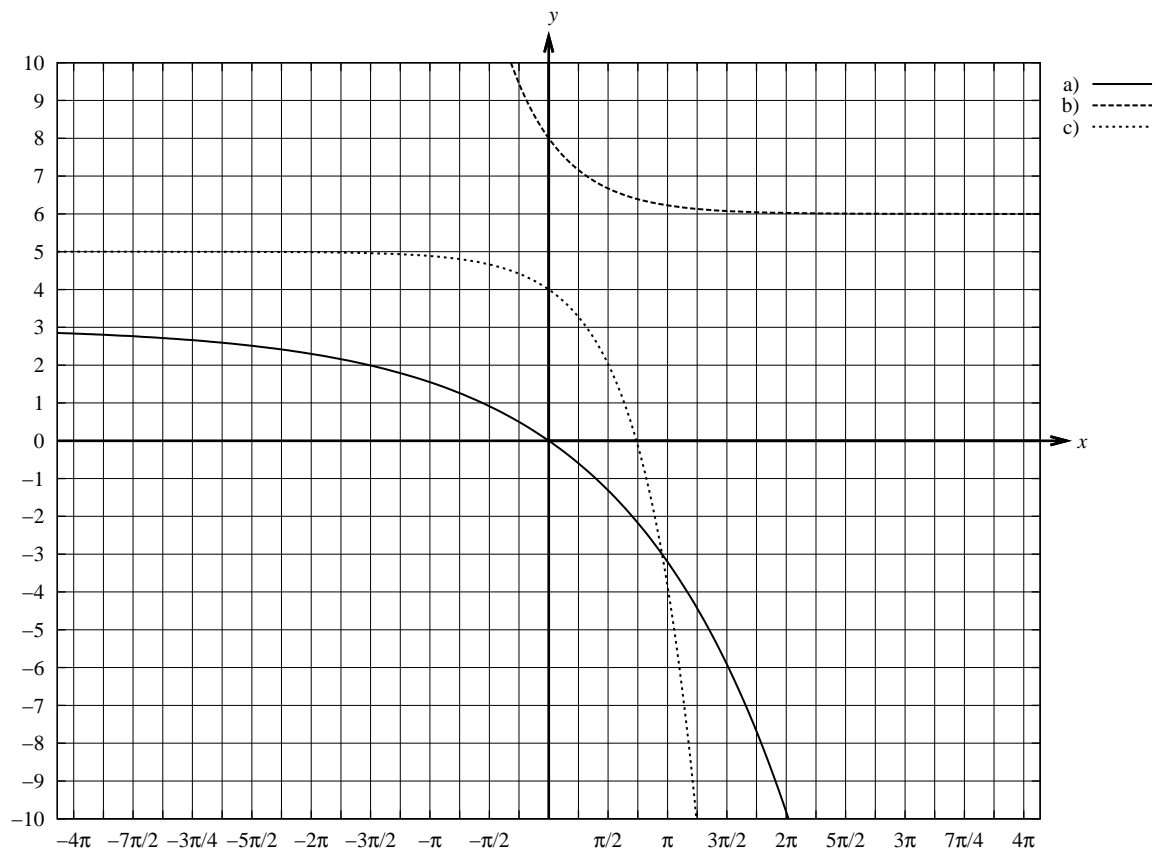
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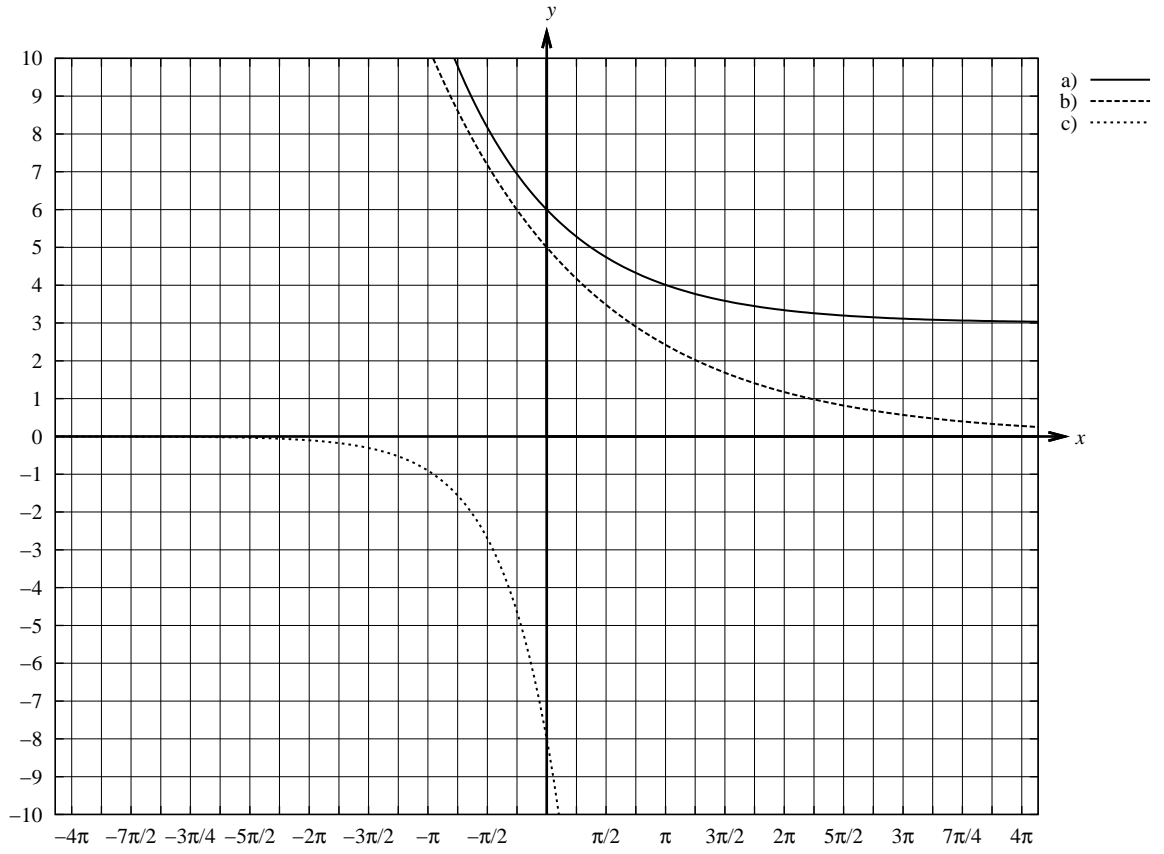
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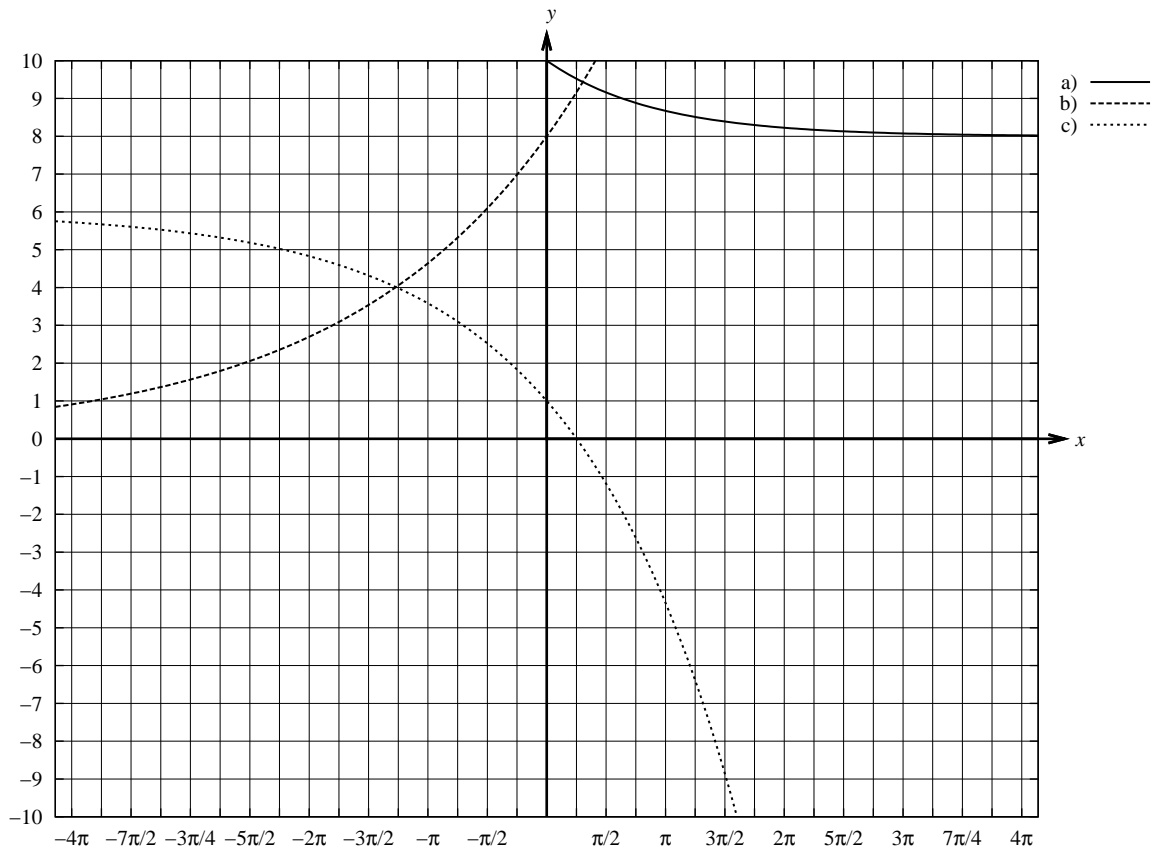
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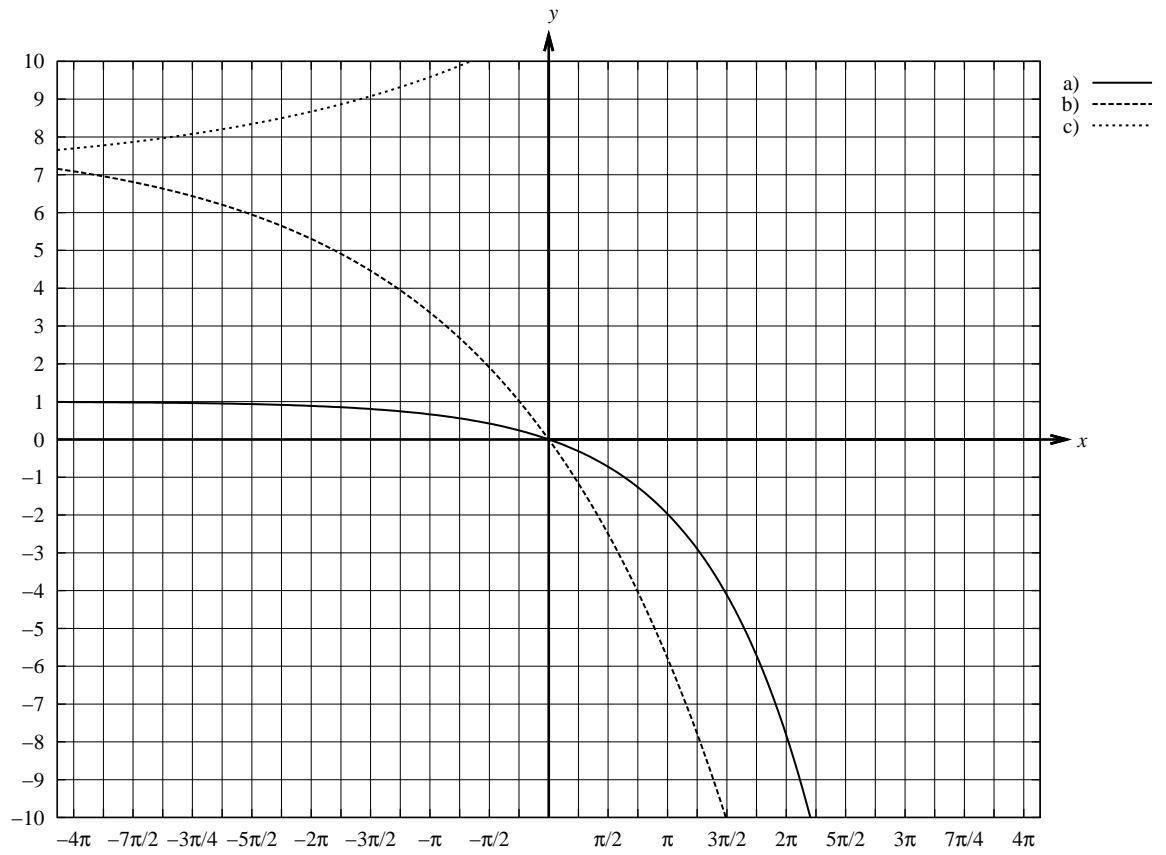
6. a) b) c)



7. a) b) c)



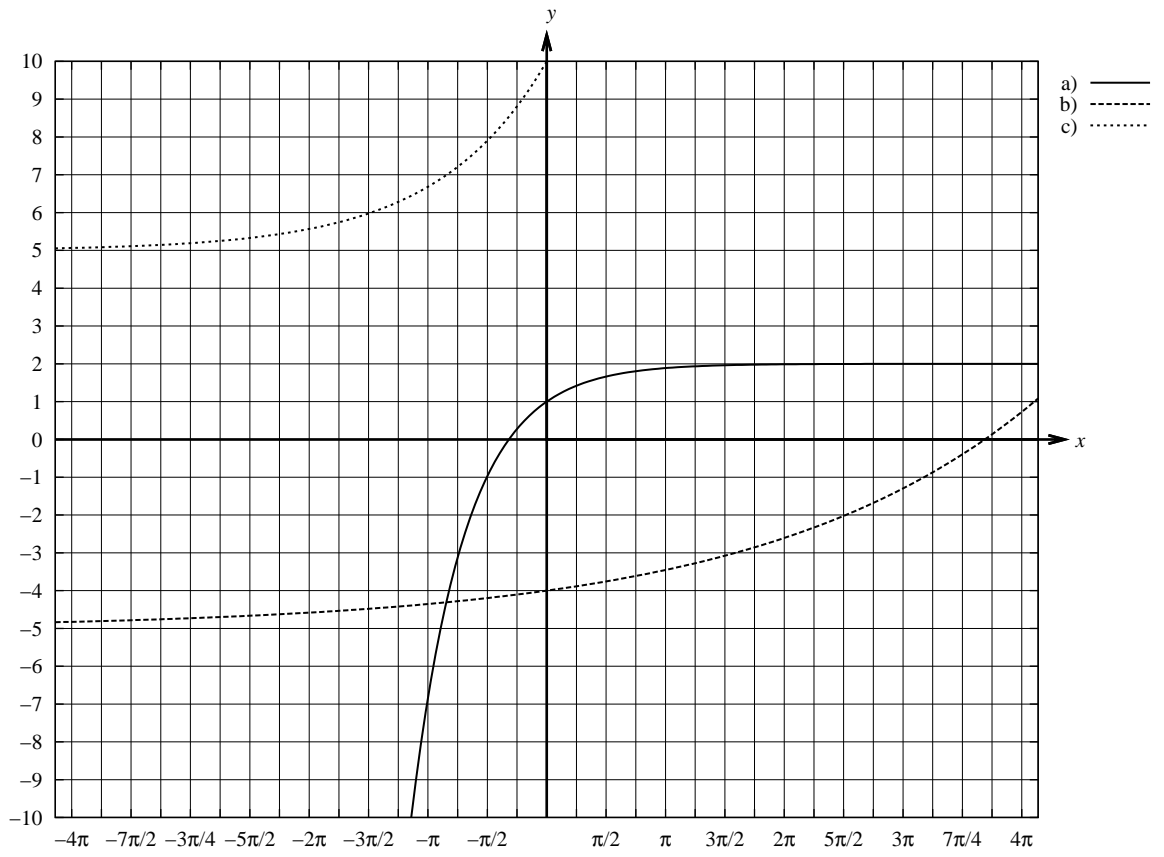
8. a) b) c)



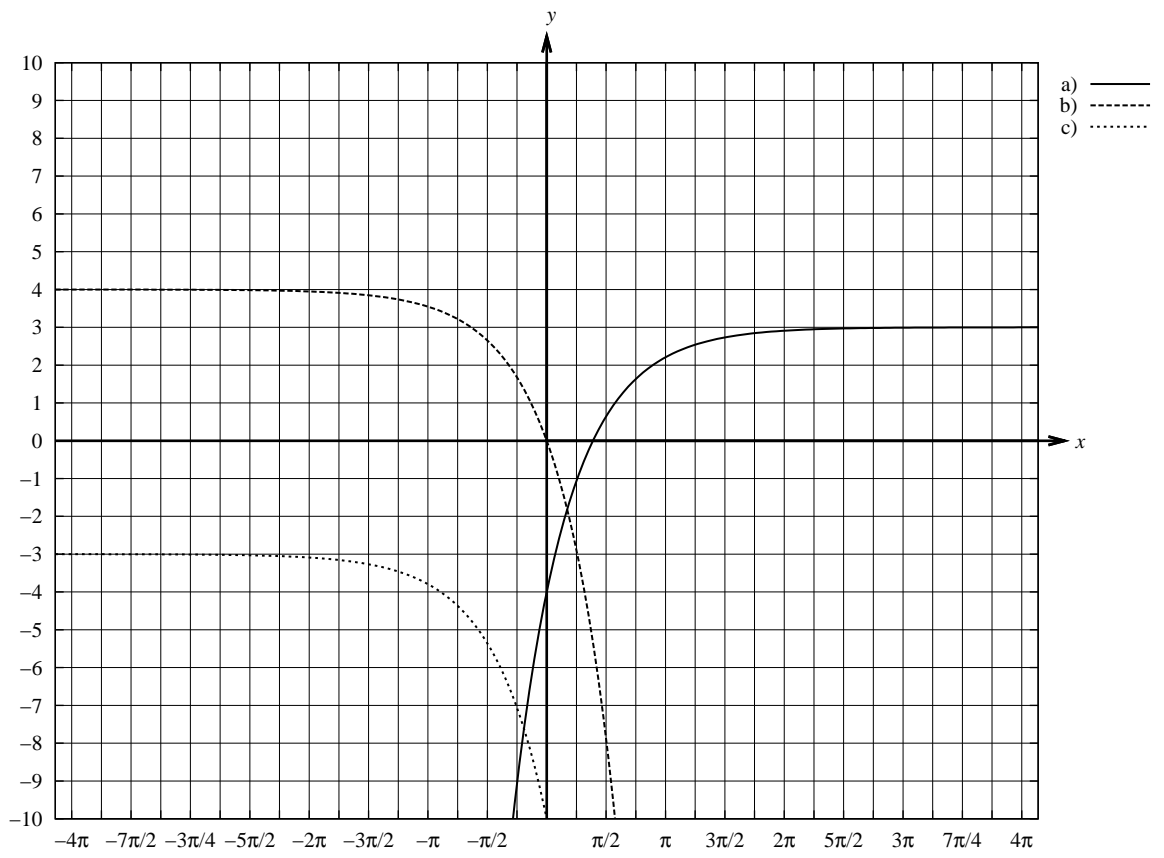
9. a) b) c)



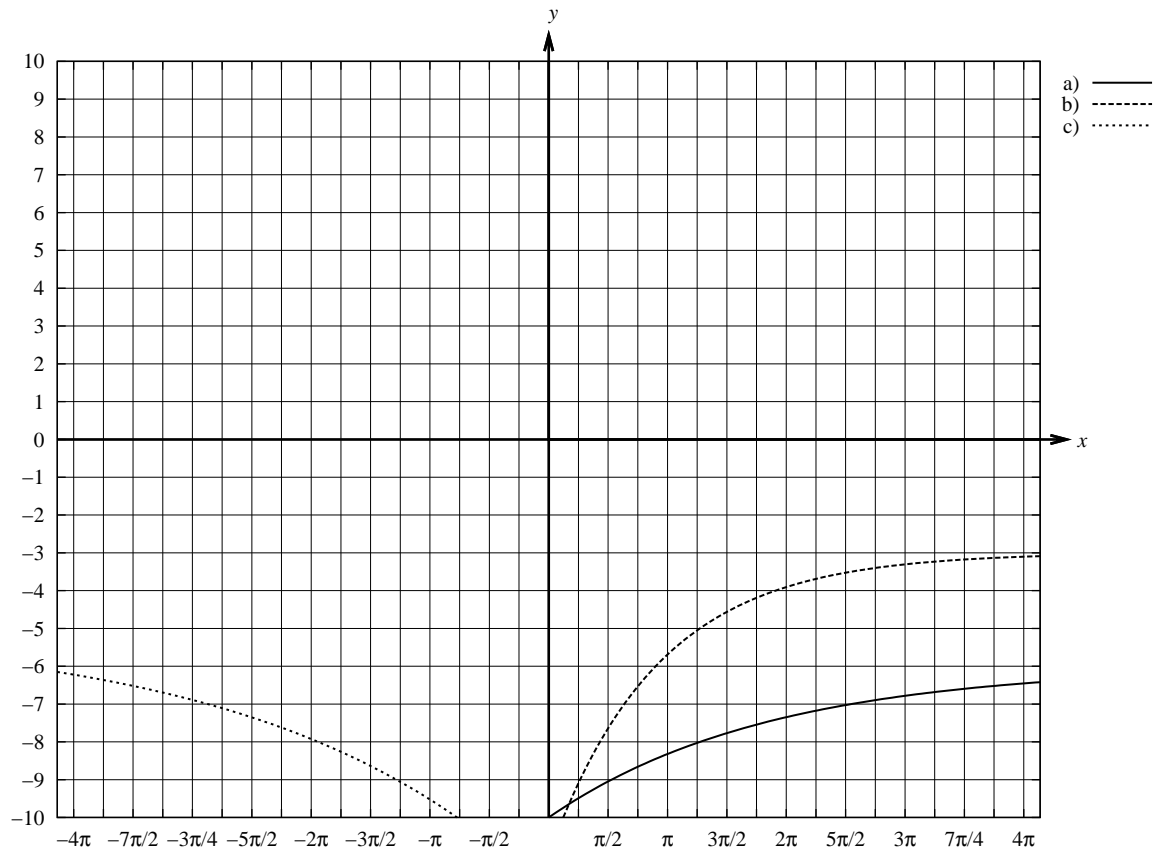
10. a) b) c)



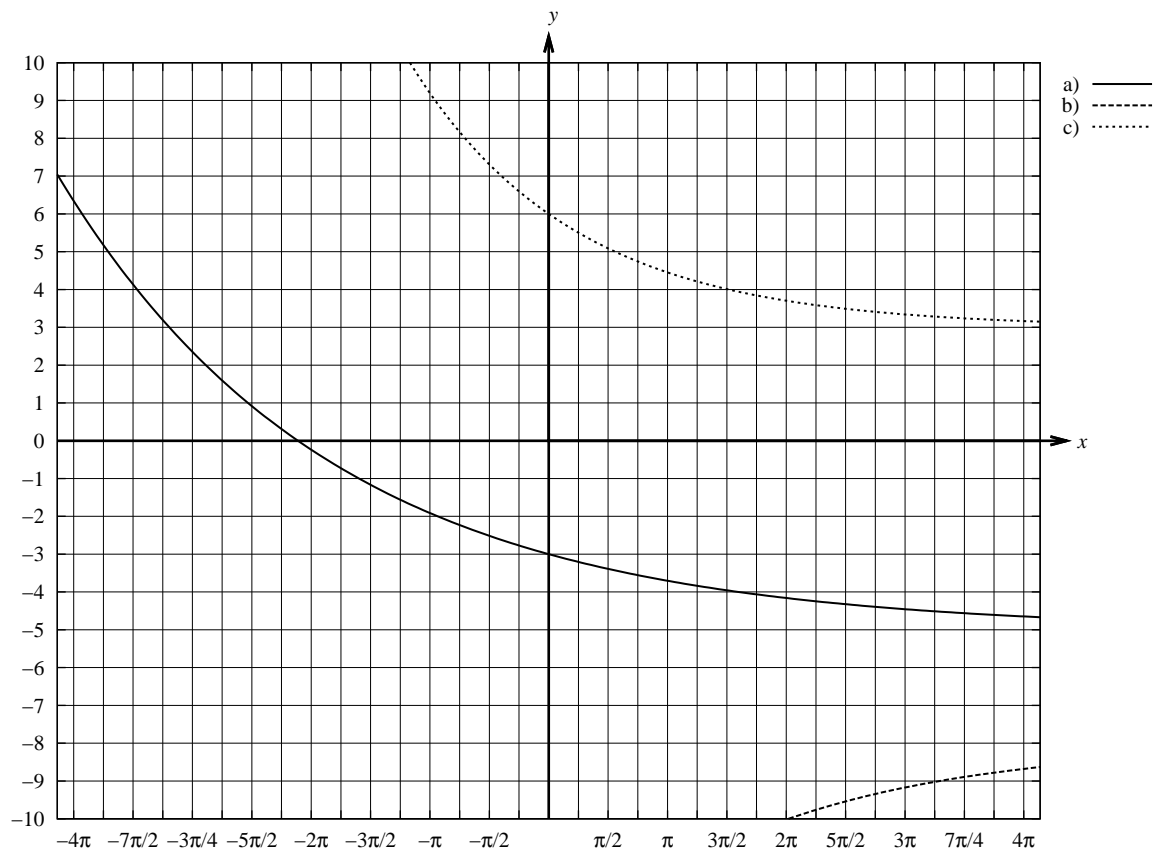
11. a) b) c)



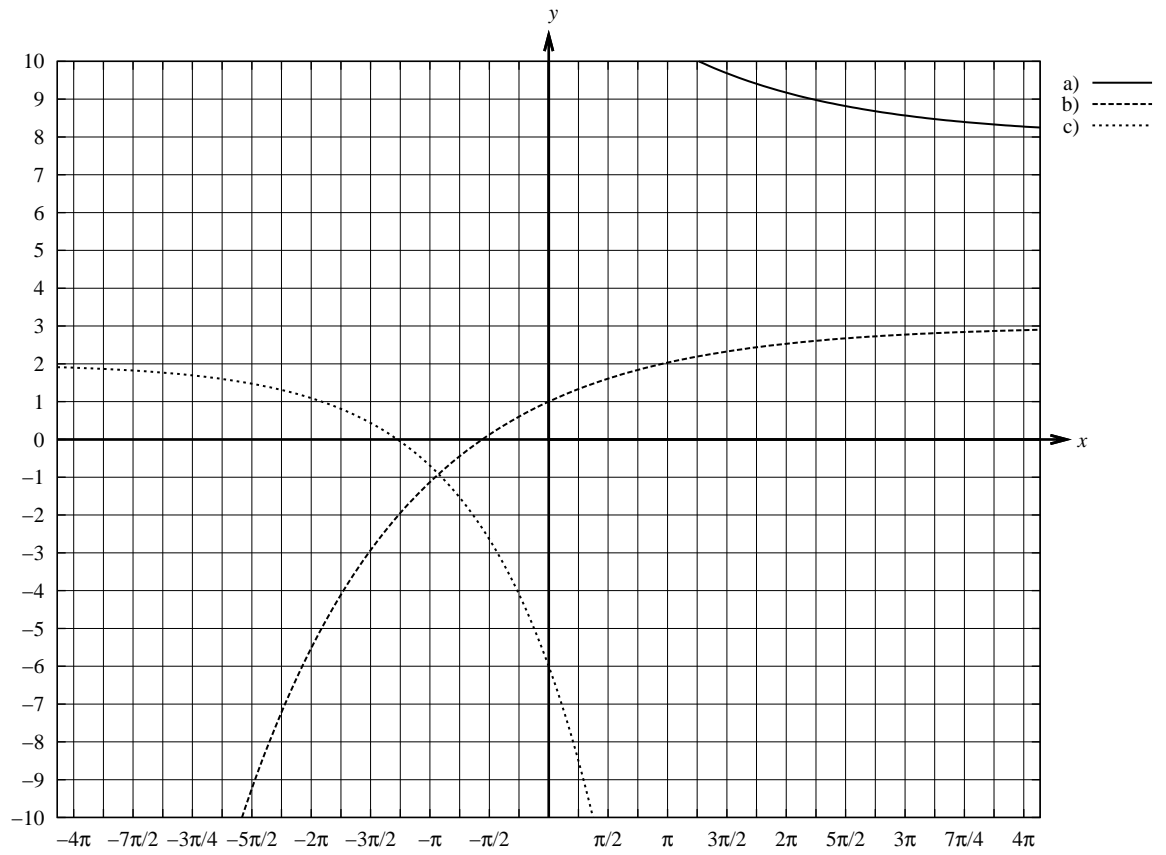
12. a) b) c)



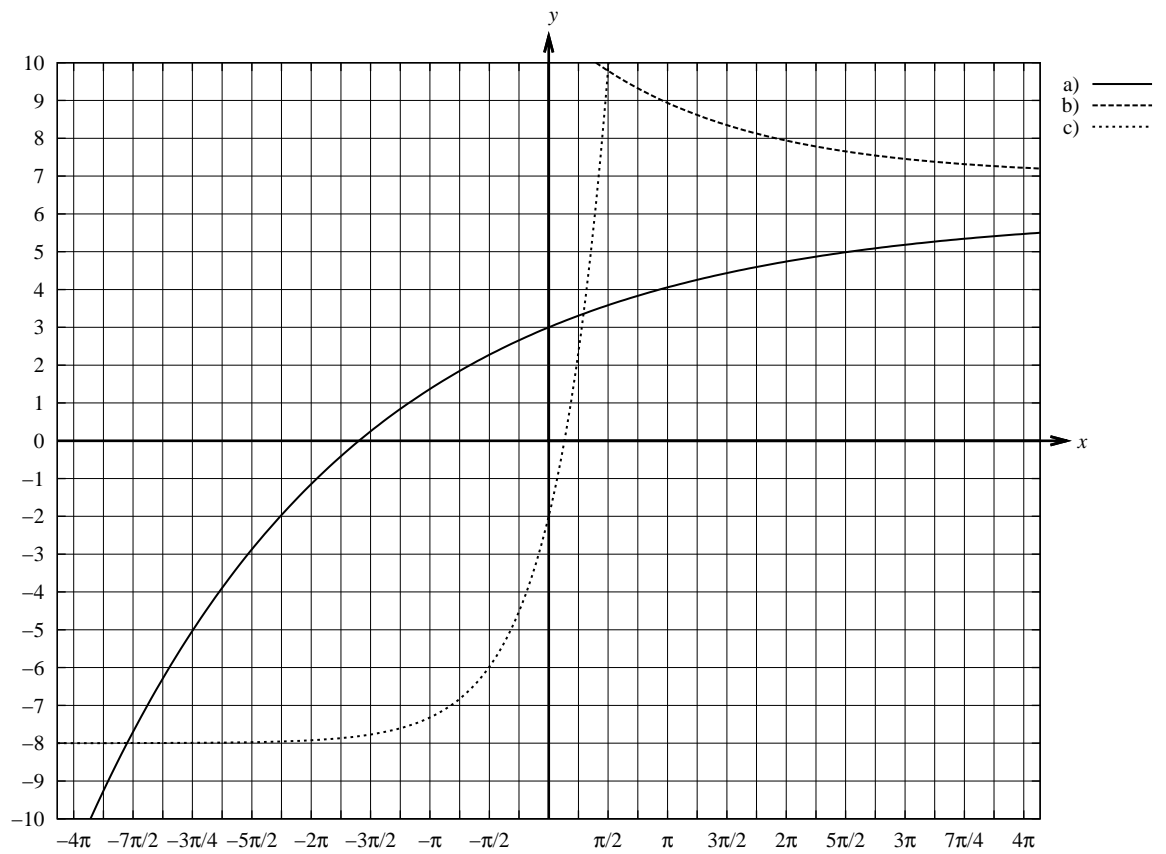
13. a) b) c)



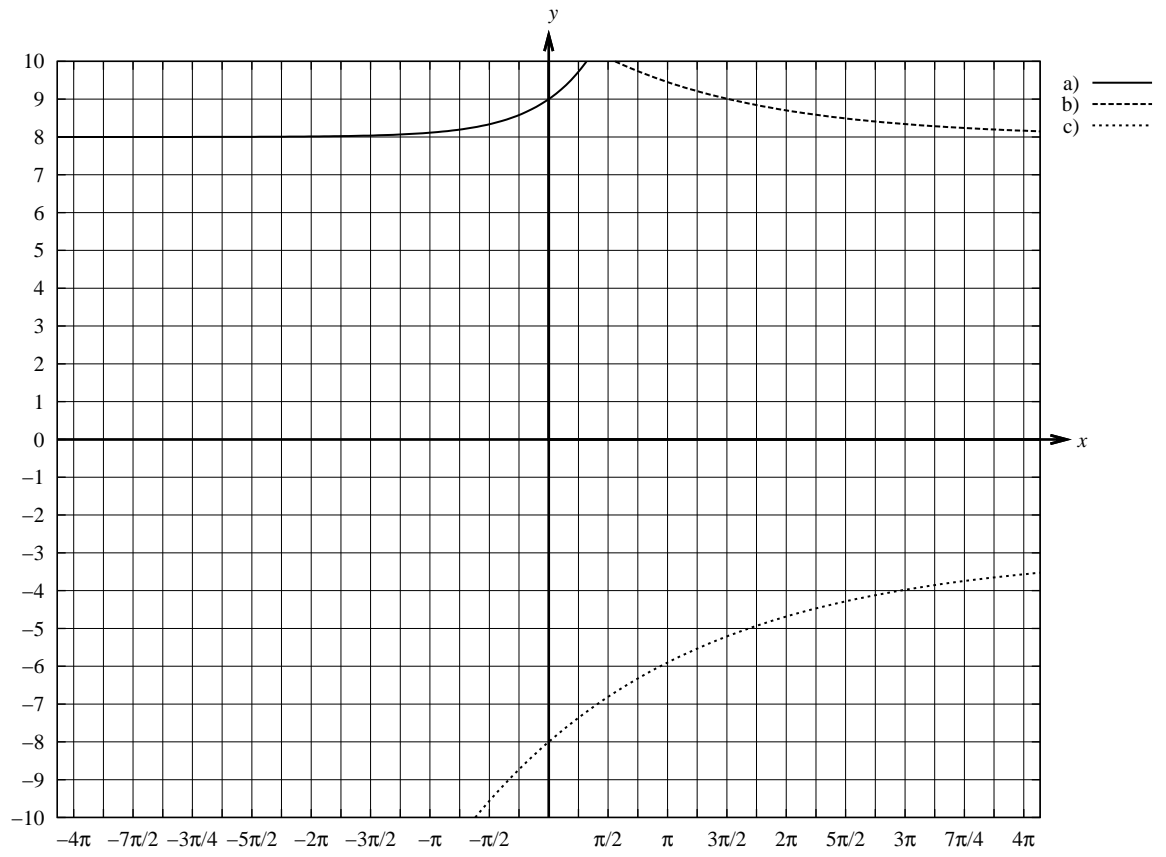
14. a) b) c)



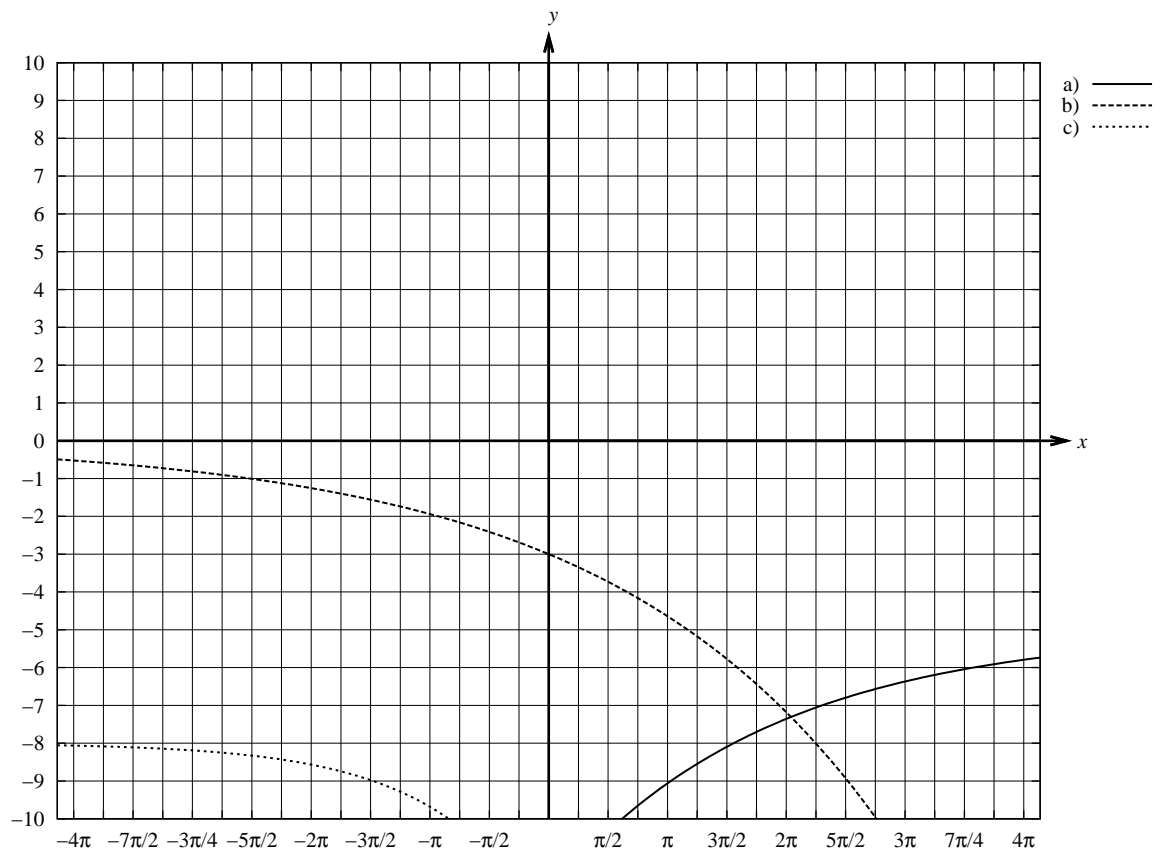
15. a) b) c)



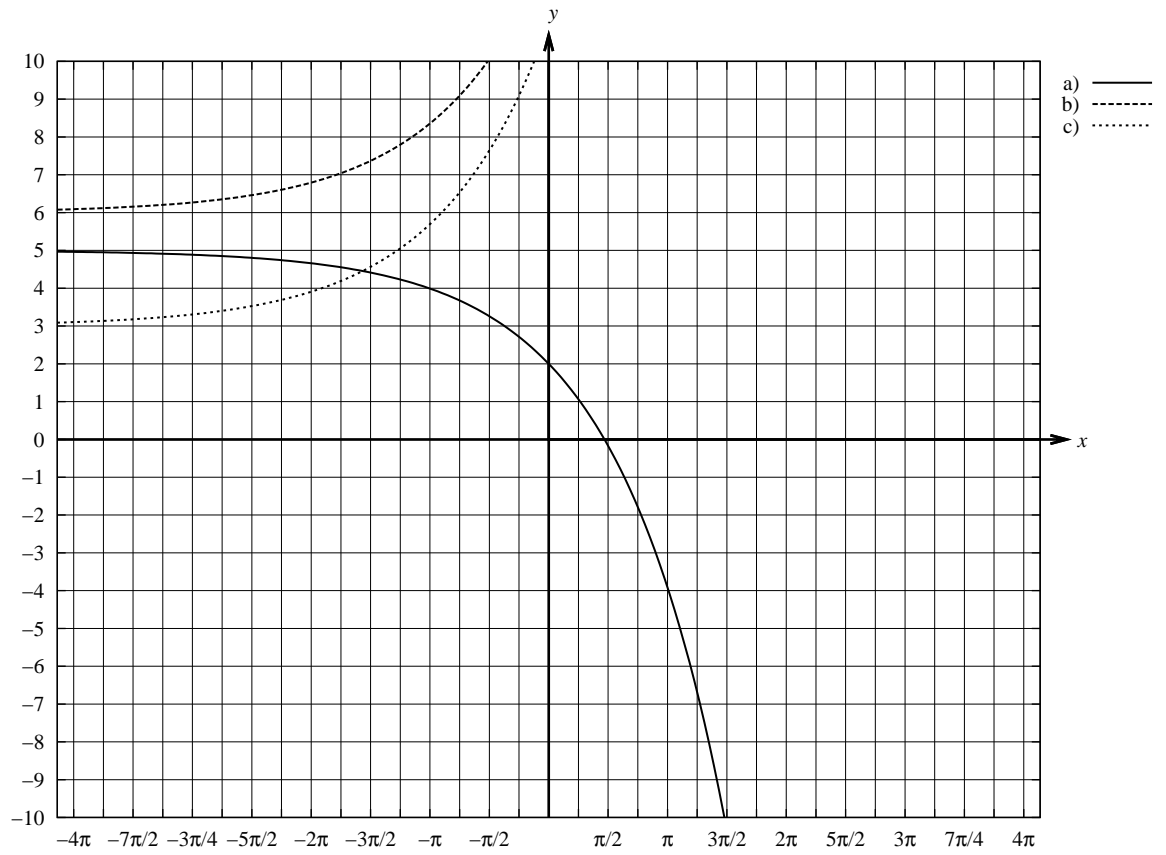
16. a) b) c)



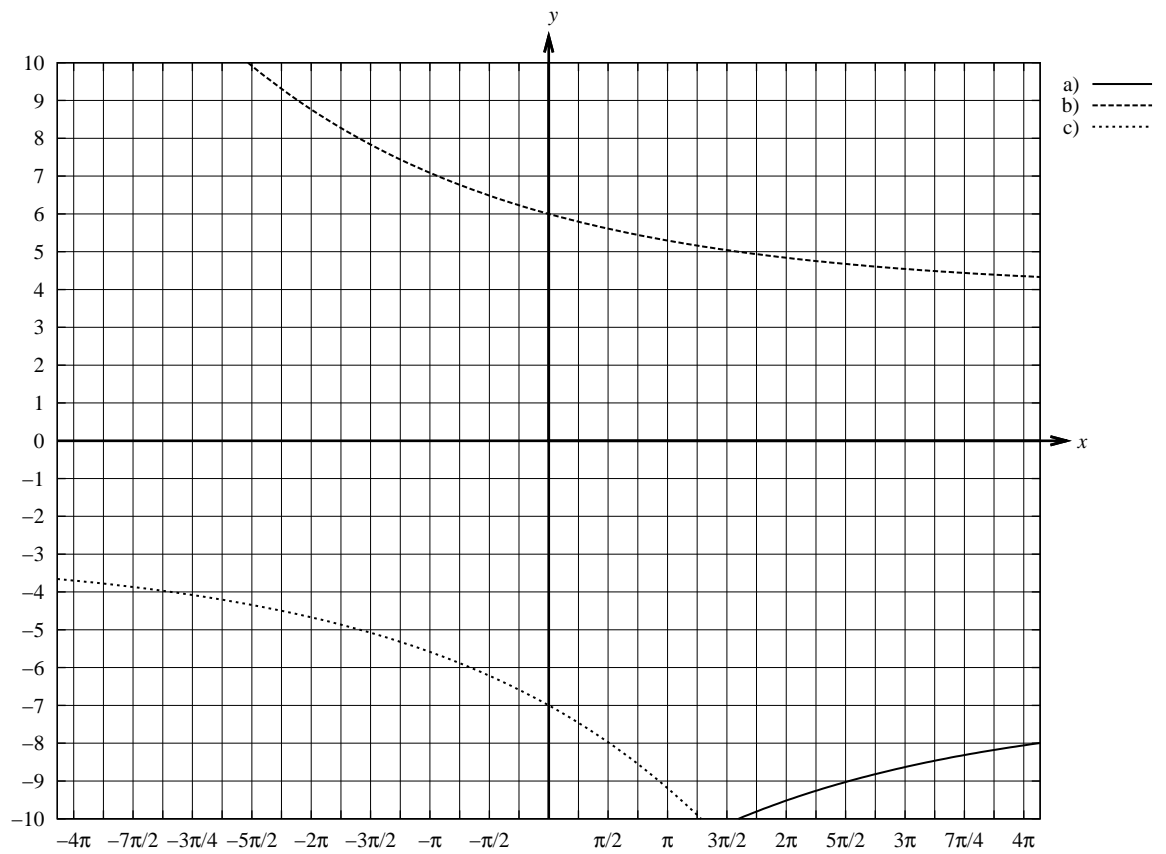
17. a) b) c)



18. a) b) c)



19. a) b) c)



20. a) b) c)

