2016/2017

Určete rovnici tečny funkce $f(x)$ v bodě a

1. $f(x) = \dfrac{1}{(2-\mathrm{e}^x)^2}, \qquad a = 0.$

2. $f(x) = \dfrac{\ln\left(x^2-3\right)}{x}, \qquad a = 2.$

3. $f(x) = \sin\left(x^2 - 2\sqrt{x} + 1\right), \qquad a = 1.$

4. $f(x) = \mathrm{tg}(1-x^2), \qquad a = 1.$

5. $f(x) = x\,\cos(2+x-x^2), \qquad a = 2.$

6. $f(x) = x^2\,\cos(1+x), \qquad a = -1.$

7. $f(x) = \cos x \cos 2x, \qquad a = \dfrac{\pi}{2}.$

8. $f(x) = 2x\cos\left(\dfrac{x}{2}\right) + 1, \qquad a = 0.$

9. $f(x) = \mathrm{e}^{\sin\left(\frac{x}{2}\right)}, \qquad a = 0.$

10. $f(x) = \dfrac{x+1}{x^2+1}, \qquad a = -1.$

11. $f(x) = \mathrm{tg}\Big(x^2 + x - 2\Big), \qquad a = -2.$

12. $f(x) = x\,\mathrm{arctg}(x-2), \qquad a = 2.$

13. $f(x) = x\,\mathrm{e}^{1-\frac{1}{x}}, \qquad a = 1.$

14. $f(x) = \mathrm{e}^{x^2+2x-8}, \qquad a = 2.$

15. $f(x) = x\,\sin\dfrac{x}{2}, \qquad a = \pi.$

16. $f(x) = \sin\left(x^3+8\right), \qquad a = -2.$

17. $f(x) = \dfrac{1}{(1+\mathrm{e}^x)^2}, \qquad a = 0.$

18. $f(x) = \sqrt{5-\mathrm{e}^{-4x}}, \qquad a = 0.$

19. $f(x) = x\,\mathrm{e}^{1-x^2}, \qquad a = -1.$

20. $f(x) = \ln\left(\dfrac{x}{1-2x}\right), \qquad a = \dfrac{1}{3}.$

21. $f(x) = \dfrac{x}{\sin 2x}, \qquad a = \dfrac{\pi}{4}.$

22. $f(x) = \cos\left(\dfrac{3x}{1-2x}\right), \qquad a = 0.$

23. $f(x) = \sin(x^3+1), \qquad a = -1.$

24. $f(x) = \dfrac{x}{\sqrt{3-2x^2}}, \qquad a = -1.$

25. $f(x) = x^2\mathrm{e}^{x^3+1}, \qquad a = -1.$

26. $f(x) = \sin\left(x-x^2\right), \qquad a = 1.$

27. $f(x) = \sqrt{x^3-x^2-2x+1}, \qquad a = 2.$

28. $f(x) = \mathrm{e}^{\frac{3x}{1-2x}}, \qquad a = 0.$

29. $f(x) = \sqrt{1+2\ln\left(x^2+x+1\right)}, \qquad a = 0.$

30. $f(x) = \sqrt{x^3 + 1}, \qquad a = 2.$

31. $f(x) = \sqrt{x}\,\ln(5 - x), \qquad a = 4.$

32. $f(x) = \sqrt{\sin(2x) + 1}, \qquad a = 0.$

33. $f(x) = \ln\Big(x^2 + 2x - 7\Big), \qquad a = 2.$

34. $f(x) = (\sin(1 - 2x) + 1)^3, \qquad a = \dfrac{1}{2}.$

35. $f(x) = \mathrm{e}^{\sin\left(x^2 - 1\right)}, \qquad a = 1.$

36. $f(x) = \operatorname{arctg}\left(1 - \mathrm{e}^{x-2}\right), \qquad a = 2.$

37. $f(x) = \sqrt{9 - x^3}, \qquad a = 2.$

38. $f(x) = x\cos 3x, \qquad a = \dfrac{\pi}{3}.$

39. $fx = \dfrac{x}{1 + \ln^2 x}, \qquad a = 1.$

40. $fx = \dfrac{x^2}{1 + \ln x}, \qquad a = 1.$

41. $f(x) = \dfrac{1}{\sqrt{\sin 2x}}, \qquad a = \dfrac{\pi}{4}.$

42. $f(x) = \dfrac{x}{\sqrt{x^2 - 3x + 1}}, \qquad a = 3.$

43. $f(x) = \ln\Big(x^2 - x + 1\Big), \qquad a = 1.$

44. $f(x) = x\ln\left(x^4 - 2x + 2\right), \qquad a = 1.$

45. $f(x) = \ln\left(\ln\left(x^2 - 3x + 3\right) + 1\right), \qquad a = 2.$

46. $f(x) = (\cos(1 - 2x) + 1)^3, \qquad a = \dfrac{1}{2}.$

47. $f(x) = \mathrm{e}^{\sin\left(1 - \frac{x}{3}\right)}, \qquad a = 3.$

48. $f(x) = \Big(x^2 - 1\Big)\ln\Big(x^2\Big), \qquad a = 1.$

49. $f(x) = x\sqrt{5 - x^2}, \qquad a = -1.$

50. $f(x) = 2x\cos\left(\dfrac{x}{2}\right), \qquad a = 2\pi.$

2016/2017

Určete rovnici tečny funkce $f(x)$ v bodě a

1. $t : y = 2\,x + 1,$
2. $t : y = 2x - 4,$
3. $t : y = x - 1$
4. $t : y = -2\,(x - 1)\,,$
5. $t : y = x,$
6. $t : y = -2\,x - 1.$
7. $t : y = x - \dfrac{\pi}{2},$
8. $t : y = 2x + 1,$
9. $t : y = \dfrac{x}{2} + 1,$
10. $t : \dfrac{1}{2}\,(x + 1)\,,$
11. $t : y = -3\,(x + 2)\,,$
12. $t : y = 2\,(x - 2)\,,$
13. $t : y = 2\,x - 1,$
14. $t : y = 6\,x - 11,$
15. $t : y = x,$
16. $t : y = 12\,(x + 2)\,,$
17. $t : y = -\dfrac{1}{4}\,(x - 1)\,,$
18. $t : y = x + 2,$
19. $t : y = -x - 2,$
20. $t : y = 9x - 3,$
21. $t : y = x,$
22. $t : y = 1,$
23. $t : y = 3\,(x + 1)\,,$
24. $t : y = 3x + 2,$
25. $t : y = x + 2$
26. $t : y = 1 - x$
27. $t : y = 3x - 5$
28. $t : y = 3x + 1,$
29. $t : y = x + 1$
30. $t : y = 2x - 1,$
31. $t : y = 8 - 2x,$
32. $t : y = x + 1,$
33. $t : y = 6\,(x - 2)\,,$
34. $t : y = 4 - 6x,$
35. $t : y = 2x - 1,$
36. $t : y = 2 - x$
37. $t : y = 13 - 6\,x,$
38. $t : y = -x,$
39. $t : y = x$
40. $t : y = x$
41. $t : y = 1,$
42. $t : y = -\dfrac{1}{2}\,(7x - 27)\,,$
43. $t : y = x - 1,$
44. $t : y = 2x - 2$
45. $t : y = x - 2$
46. $t : y = 8,$
47. $t : y = 2 - \dfrac{x}{3},$
48. $t : y = 0,$
49. $t : y = \dfrac{1}{2}\,(3x - 1)\,,$
50. $t : y = -2x,$