2016/2017

Spočtěte derivaci funkce $f(x)$:

1. $f(x) = \left(x - \dfrac{x^2}{x+1}\right)^{-1}$

2. $f(x) = \left(\dfrac{1}{x-1} - \dfrac{x}{x^2-1}\right)^{-1}$

3. $f(x) = \dfrac{\dfrac{x+1}{x-1} - \dfrac{x-1}{x+1}}{1 - \dfrac{x^2+1}{x^2-1}}$

4. $f(x) = \dfrac{\dfrac{2x}{x+1} - x}{1 - \dfrac{2x}{x+1}}$

5. $f(x) = \sqrt{x\sqrt{x\sqrt{x}}}.$

6. $f(x) = \dfrac{\dfrac{1-\sqrt{x}}{x^{-2}}}{\dfrac{x}{1+\sqrt{x}}}$

7. $f(x) = \dfrac{x^{-2}}{\dfrac{x}{x-3} - \dfrac{x+3}{x}}$

8. $f(x) = \left(\dfrac{1}{x+1} - \dfrac{2x}{x^2-1}\right)^{-1}$

9. $f(x) = \dfrac{\sqrt[3]{x^2\sqrt{x}}}{\sqrt[4]{x^3\sqrt{x}}}.$

10. $f(x) = \left(\dfrac{\dfrac{1}{x^2} - 1}{x - \dfrac{1}{x}}\right)^{-2}$

11. $f(x) = \left(\dfrac{1}{x-1} - \dfrac{x}{x^2+x-2}\right)^{-1}$

12. $f(x) = \dfrac{\dfrac{\sqrt{x^3}}{\sqrt[3]{x}}}{\dfrac{\sqrt[3]{x^2}}{\sqrt{x}}}$

13. $f(x) = \sqrt[4]{x\sqrt[3]{x\sqrt{x}}}.$

14. $f(x) = \dfrac{x - \frac{1}{x}}{\frac{1}{x^{-2}}}.$

15. $f(x) = \dfrac{\dfrac{\sqrt{x}}{\sqrt{x}-1} - \dfrac{1}{\sqrt{x}+1} + 1}{\dfrac{\sqrt{x}}{\sqrt{x}+1} + \dfrac{1}{\sqrt{x}-1} - 1}$

16. $f(x) = \left(\dfrac{1}{x-1} - \dfrac{x}{x^2-x+1}\right)^{-1}$

17. $f(x) = \dfrac{x^{-1}}{\dfrac{x}{3-x} + \dfrac{x+3}{x}}$

18. $f(x) = \dfrac{\sqrt[3]{x^2} - \sqrt{x^3}}{\frac{1}{x}}.$

19. $f(x) = \dfrac{\sqrt{x^3\sqrt[4]{x^5}}}{\sqrt[3]{x\sqrt{x}}}.$

20. $f(x) = \dfrac{\sqrt{x} - \sqrt[3]{x^2}}{\sqrt[4]{x^3}}.$

21. $f(x) = \dfrac{\dfrac{1}{x} - 1}{x - \dfrac{1}{x}}$

22. $f(x) = \dfrac{\sqrt[3]{x^4\sqrt{x^3}}}{\sqrt{x^3\sqrt[3]{x^2}}}.$

23. $f(x) = \left(\dfrac{2x}{2-x} - x\right) \cdot \dfrac{2}{1 - \dfrac{x}{x-2}}$

24. $f(x) = \left(\dfrac{1 + \dfrac{1}{x}}{\dfrac{1}{x} - x}\right)^{-1}$

25. $f(x) = \sqrt{x\sqrt[3]{x\sqrt[4]{x}}}.$

2016/2017

Spočtěte derivaci funkce $f(x)$:

1. $f'(x) = -\dfrac{1}{x^2}$
2. $f'(x) = 2x$
3. $f'(x) = -2$
4. $f'(x) = 1$
5. $f'(x) = \dfrac{7}{8}x^{-\frac{1}{8}}$
6. $f'(x) = 1 - 2x$
7. $f'(x) = \dfrac{1}{3}x^{-2}$
8. $f'(x) = -1$
9. $f'(x) = -\dfrac{1}{24}x^{-\frac{25}{24}}$
10. $f'(x) = 2x$
11. $f'(x) = \dfrac{1}{2}(2x+1)$
12. $f'(x) = 1$
13. $f'(x) = \dfrac{3}{8}x^{-\frac{5}{8}}$
14. $f'(x) = -x^{-2} + 3x^{-4}$
15. $f'(x) = 1$
16. $f'(x) = -2(x-1)$
17. $f'(x) = -\dfrac{1}{9}$
18. $f'(x) = \dfrac{5}{3}x^{\frac{2}{3}} - \dfrac{5}{2}x^{\frac{3}{2}}$
19. $f'(x) = \dfrac{13}{8}x^{\frac{5}{8}}.$
20. $f'(x) = -\dfrac{1}{4}x^{-\frac{5}{4}} + \dfrac{1}{12}x^{-\frac{13}{12}}$
21. $f'(x) = (x+1)^{-2}$
22. $f'(x) = 0.$
23. $f'(x) = 2x$
24. $f'(x) = -1$
25. $f'(x) = \dfrac{17}{24}x^{-\frac{7}{24}}$