

SOUHRN – DEFINIČNÍ OBOR JEDNÉ PROMĚNNÉ

Níže uvedené příklady se objevily ve zkouškových testech v minulých letech.

Zadání

Výsledky

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| 1) $f(x) = \frac{1}{1 - \log(8 - x)} + \sqrt{\frac{9x^2 - 1}{x^2 - 10x + 21}}$ | 1✓ $D : x \in (-\infty; -2) \cup \left(-2; -\frac{1}{3}\right) \cup \left(\frac{1}{3}; 3\right) \cup (7; 8)$ |
| 2) $f(x) = \ln\left(\frac{x^3 - 16x}{x - 5}\right) + \sqrt{36 - x^2}$ | 2✓ $D : x \in \langle -6; -4 \rangle \cup (0; 4) \cup (5; 6)$ |
| 3) $f(x) = \sqrt{\frac{2x^2 + 9x - 5}{x^4 - 3x^5}} + \frac{2}{x - 5}$ | 3✓ $D : x \in (-\infty, -5) \cup \left(\frac{1}{3}, \frac{1}{2}\right)$ |
| 4) $f(x) = \ln\left(\frac{x^2 + 2x - 15}{x - 1}\right) + e^{\sqrt{2x - 16}}$ | 4✓ $D : x \in \langle 8; \infty \rangle$ |
| 5) $f(x) = \sqrt{\frac{5 - 3x}{x + 3}} + 1 + \ln(x^2 - 1)$ | 5✓ $D : x \in (-3; -1) \cup (1; 4)$ |
| 6) $f(x) = \frac{1}{x - 2} + \arcsin\left(\frac{2x - 5}{5}\right) + \ln(x^2 - 1)$ | 6✓ $D : x \in (1; 2) \cup (2; 5)$ |
| 7) $f(x) = \log\left(\frac{4^x - 16}{x^2 + 2x - 3}\right) + e^{\sqrt{25 - 4x^2}}$ | 7✓ $D : x \in \left\langle -\frac{5}{2}; 1 \right\rangle \cup \left(2; \frac{5}{2}\right)$ |
| 8) $f(x) = \frac{\sqrt{x^2 - 3x - 10}}{\log(x + 4) - 1} + \log(8 - x)$ | 8✓ $D : x \in (-4; -2) \cup \langle 5; 6 \rangle \cup (6; 8)$ |
| 9) $f(x) = \sqrt{\ln(5 - x)} + \sqrt{\frac{x^2 + 2x - 3}{2x - 4}}$ | 9✓ $D : x \in \langle -3; 1 \rangle \cup (2; 4)$ |
| 10) $f(x) = \sqrt{\frac{2^x - 8}{x^3 - 3x^2 - 10x}} + \log(100 - x^2)$ | 10✓ $D : x \in (-10; -2) \cup (0; 3) \cup (5; 10)$ |
| 11) $f(x) = \sqrt{25 - x^2} + \ln \frac{x^3 + 4x^2 - 21x}{4 - x}$ | 11✓ $D : x \in \langle -5; 0 \rangle \cup (3; 4)$ |
| 12) $f(x) = \ln\left(\frac{x^2 - 3x + 2}{x + 4}\right) + \arcsin\left(\frac{2x - 1}{7}\right)$ | 12✓ $D : x \in \langle -3; 1 \rangle \cup (2; 4)$ |
| 13) $f(x) = \log(x^2 - 4) + \sqrt{\frac{x^2 - 9}{x^2 - x - 20}}$ | 13✓ $D : x \in (-\infty; -4) \cup \langle -3; -2 \rangle \cup (2; 3) \cup (5; \infty)$ |
| 14) $f(x) = \sqrt{25 - x^2} + \ln\left(\frac{x^2 + 2x - 3}{x^2 + 2x - 8}\right)$ | 14✓ $D : x \in \langle -5; 4 \rangle \cup (-3; 1) \cup (2; 5)$ |
| 15) $f(x) = \ln \sqrt{\frac{2 - e^{4x}}{2 + e^{4x}}}$ | 15✓ $D : x \in \left(-\infty; \frac{\ln 2}{4}\right)$ |
| 16) $f(x) = \sqrt{\frac{2^x - 8}{x^2 + 4x - 5}} + \ln(x^2 + 3x)$ | 16✓ $D : x \in (-5; -3) \cup (0; 1) \cup \langle 3; \infty \rangle$ |
| 17) $f(x) = \sqrt{\frac{x^2 - 9x + 20}{x - 3}} + \log(\log(10 - x))$ | 17✓ $D : x \in (3; 4) \cup \langle 5; 9 \rangle$ |

- 18) $f(x) = \sqrt{\frac{5^x - 25}{x^2 - x - 12}} + \log(x^2 - 1)$ 18✓ $D : x \in (-3; -1) \cup (1; 2) \cup (4; \infty)$
- 19) $f(x) = \sqrt{x^2 - 4x + 3} + \sqrt{\ln(5 - x)}$ 19✓ $D : x \in \langle -\infty; 1 \rangle \cup \langle 3; 4 \rangle$
- 20) $f(x) = \sqrt{\log(\log(x + 8))}$ 20✓ $D : x \in \langle 2; \infty \rangle$
- 21) $f(x) = \frac{2^x + 1}{2^x - 1} + \frac{5}{\sqrt{8 - 2^x}}$ 21✓ $D : x \in (-\infty; 0) \cup (0; 3)$
- 22) $f(x) = e^{\sqrt{1 - \log(x + 3)}}$ 22✓ $D : x \in (-3; 7)$
- 23) $f(x) = \sqrt{64 - x^2} - \ln\left(\frac{x - 3}{x^2 - 4x - 5}\right)$ 23✓ $D : x \in (-1; 3) \cup (5; 8)$
- 24) $f(x) = \ln\left(\frac{x^2 - 2x - 15}{x - 1}\right) + e^{\sqrt{x^2 - 16}}$ 24✓ $D : x \in (5; \infty)$
- 25) $f(x) = \frac{\sqrt{x^2 - 4}}{\log(x + 4) - 1}$ 25✓ $D : x \in (-4; -2) \cup \langle 2; 6 \rangle \cup (6; \infty)$
- 26) $f(x) = \sqrt{\frac{x + 6}{x^2 - 6x + 8}} + \log(x^2 - 9)$ 26✓ $D : x \in \langle -6; -3 \rangle \cup (4; \infty)$
- 27) $f(x) = \sqrt{\frac{x^2 + 3x - 4}{x^2 - 9}} + \log(\log(2x + 15))$ 27✓ $D : x \in (-7; -4) \cup (-3; 1) \cup (3; \infty)$
- 28) $f(x) = \sqrt{x^2 - 9} + \log\left(\frac{x^2 - 2x - 35}{x^2 - 16}\right)$ 28✓ $D : x \in (-\infty; -5) \cup (-4; -3) \cup \langle 3; 4 \rangle \cup (7; \infty)$
- 29) $f(x) = e^{\sqrt{49 - x^2}} + \ln\left(\frac{x^2 - 4x - 12}{x + 10}\right)$ 29✓ $D : x \in \langle -7; -2 \rangle \cup (6; 7)$
- 30) $f(x) = \sqrt{\frac{x^2 + 2x - 15}{4^x - 16}} + \ln(16 - x^2)$ 30✓ $D : x \in (-4; 2) \cup \langle 3; 4 \rangle$
- 31) $f(x) = \sqrt{x^2 - x - 2} - \ln(5 - x)$ 31✓ $(-\infty; -1) \cup \langle 2; 5 \rangle$
- 32) $f(x) = \sqrt{\frac{x + 3}{x - 3} - \frac{x - 3}{x + 3}} + \ln(x^2 - 4)$ 32✓ $(-3; -2) \cup (3; \infty)$
- 33) $f(x) = \ln\left(\frac{3^x - 3}{x^2 + 2x - 15}\right) + \sqrt{16 - x^2}$ 33✓ $\langle -4; 1 \rangle \cup (3; 4)$
- 34) $f(x) = \sqrt{x^2 - 1} - \operatorname{arctg} \sqrt{x^2 - 1}$ 34✓ $(-\infty; -1) \cup \langle 1; \infty \rangle$
- 35) $f(x) = \sqrt{\frac{x^2 - 6x + 8}{x + 8}} + \ln(x^2 - 36)$ 35✓ $(-8; -6) \cup (6; \infty)$
- 36) $f(x) = \sqrt{\frac{x^2 + 7x - 8}{9 - x^2}} + \log(\log(x + 7))$ 36✓ $(-6; -3) \cup \langle 1; 3 \rangle$
- 37) $f(x) = \ln(x^2 - 4) + \sqrt{\frac{x^2 + 2x - 24}{x^2 + 4x}}$ 37✓ $(-\infty; -6) \cup (-4; -2) \cup \langle 4; \infty \rangle$
- 38) $f(x) = \sqrt{\frac{x^2 + x - 2}{16 - x^2}} + \log(9 - x^2)$ 38✓ $\langle -3; -2 \rangle \cup \langle 1; 3 \rangle$
- 39) $f(x) = \ln\left(\frac{x^3 - 8}{x^2 + 5x - 6}\right) + e^{\sqrt{25 - x^2}}$ 39✓ $\langle -5; 1 \rangle \cup \langle 2; 5 \rangle$

- 40) $f(x) = \sqrt{x^2 - 1} + \log\left(\frac{x^3 - 25x}{x - 3}\right)$ 40✓ $(-\infty; -5) \cup \langle 1; 3 \rangle \cup \langle 5; \infty)$
- 41) $f(x) = \sqrt{\frac{x^3 - 9x}{\log(x + 5) - 1}} + \ln(12 - x)$ 41✓ $\langle -5; -3 \rangle \cup \langle 0; 3 \rangle \cup \langle 5; 12 \rangle$
- 42) $f(x) = \ln\left(\frac{x^2 - 4x - 5}{8 - 2^x}\right) + \sqrt{16 - x^2}$ 42✓ $\langle -4; -1 \rangle \cup \langle 3; 4 \rangle$
- 43) $f(x) = \ln\left(\frac{2^x - 16}{x^2 + 2x - 15}\right) + \sqrt{x^2 - 1}$ 43✓ $(-5; -1) \cup \langle 1; 3 \rangle \cup \langle 4; \infty)$
- 44) $f(x) = \sqrt{\frac{x^2 - 3x - 10}{x^2 - 7x + 12}} + \log(\log(x + 5))$ 44✓ $(-4; -2) \cup \langle 3; 4 \rangle \cup \langle 5; \infty)$