DELOVNI LIST 4- ***EKSPONENTNA ENAČBA***

1. Reši enačbe:

(a) $8^x = 1$ [R: 0]

(b) $3^{x-1} = 1$ [R: 1]

(c) $4^x = 16$ [R: 2]

(d) $5^{-x} = 125$ [R: -3]

(e) $\frac{27}{8} = (\frac{2}{3})^x$ [R: -3]

(f) $3^{-x} = \frac{1}{27}$ [R: 3]

(g) $2^x = -8$ [R: $\emptyset$]

(h) $(\frac{9}{13})^{x+3} = 1$ [R: -3]

(i) $2^{x-2} = 5^{2-x}$ [R: 2]

(j) $5^{x-4} = 6^{x-4}$ [R: 4]

(k) $8^{5-x} = 7^{x-5}$ [R: 5]

(l) $4^{2x-3} = 7^{x-1,5}$ [R: $\frac{3}{2}$]

(m) $2^{x^2-7x+12} = 1$ [R: 4; 3]

(n) $5^{x^2-8x+12} = 1$ [R: 2; 6]

(o) $(5^{x-1})^{x+1} = (25^x)^{\frac{x}{2}-1}$ [R: $\frac{1}{2}$]

(p) $(a^{4x-7})^{6x+8} = (a^{3x+2})^{8x-5}$ [R: $-\frac{46}{11}$]

2. Reši enačbe:

(a) $3^{x-1} \cdot 3^{x+1} = 81$ [R: $x = 2$]

(b) $2^{x+1} \cdot 4^{x+2} \cdot 8^{x+3} = \frac{1}{16}$ [R: $x = -3$]

(c) $5^{1-2x} \cdot 5^{1+2x} = 25^x$ [R: $x = 1$]

(d) $9 \cdot 3^{x+2} = 27^x$ [R: $x = 2$]

(e) $100^{2-x} \cdot 10^{5x-3} = 1000^{2x}$ [R: $\frac{1}{3}$]

(f) $0,125^{5x} \cdot 4^{\frac{x-1}{2}} = 32$ [R: $-\frac{3}{7}$]

(g) $\frac{1}{8} \cdot 2^{2x^3-1} = 4 \cdot 2^{2+x^3}$ [R: 2]

REŠITVE 4. naloge:

3. Reši enačbe:

(a) $4^x + 4^{x+1} = 5^{x+1}$ [R: $x = 0$]

(b) $2^{x+1} - 2^{x-1} = 12$ [R: $x = 3$]

(c) $3^{x+2} - 5 \cdot 3^x - 7 \cdot 3^{x-1} = 5$ [R: $x = 1$]

(d) $2^x + 2^{x+1} + 2^{x+2} = 7^{x-2} + 7^{x-1}$ [R: $x = 3$]

(e) $7 \cdot 2^{x-3} + 4 \cdot 3^{x-2} = 3^x - 2^x$ [R: $x = 3$]

(f) $7 \cdot 3^{x+1} - 5^{x+2} = 3^{x+4} - 5^{x+3}$ [R: $x = -1$]

(g) $3 \cdot 2^{3x-4} + 125^{x-1} = 8^{x-1} + 30 \cdot 5^{3x-5}$ [R: $x = \frac{4}{3}$]

(h) $3^{2x} + 5 \cdot 3^{2x-2} - 4 \cdot 3^{2x-1} = 18$ [R: $x = 2$]

4. Enačbe reši grafično in naredi preizkus:

(a) $2^{-x-1} = 2$ $[x = -2]$

(b) $3^x = (x-1)^2 + 3$ $[x = 1]$

(c) $2^x = -2x + 4$ $[x = 1]$

(d) $5^{x-1} = 4x - 3$ $[x = 1; x = 2]$

(e) $0,5^x = -1,5x + 1$ $[x = 0]$

(f) $3^{x-1} = 2 - x$ $[x = 1]$

(g) $-4^{-x} = -(x+1)^2 - 4$ $[x = -1]$

REŠITVE 4. naloge: