

**** MLADEN SRAGA ****
2010.

UNIVERZALNA ZBIRKA
POTPUNO RIJEŠENIH ZADATAKA
PRIRUČNIK ZA SAMOSTALNO UČENJE

MATEMATIKA

1

POTENCIJE

M.I.M.-SRAGA
 $\sqrt{\alpha}$

Autor:
MLADEN SRAGA

Grafički urednik:
Mladen Sraga

BESPLATNA - WEB-VARIJANTA

Tisak:
M.I.M.-SRAGA d.o.o.

CIP-Katalogizacija u publikaciji Nacionalna i sveučilišna knjižnica, Zagreb

© M.I.M-Sraga d.o.o. 1992./2012.

Potpunu garanciju na kompletnu zbirku daje: centar za dopisnu poduku M.I.M.-SRAGA - dakle sve što vam se čini nejasno krivo ili sumnjivo - zovite **01-4578-431** ili **01-4579-130** i tražite dodatne upute i objašnjenja ...

Dodatne upute i objašnjenja možete zatražiti i na mail: mim-sraga@zg.htnet.hr

Ovo je jako skraćena varijanta naše zbirke ...

M.I.M.-SRAGA d.o.o. zadržava sva prava na reproduciranje , umnažanje , prodaju ove zbirke potpuno riješenih zadataka isključivo u okviru svog programa poduke i dopisne poduke.

Nikakva komercijalna upotreba ove zbirke nije dozvoljena bez pismene dozvole nakladnika !

Samo zadaci su zadani od 3. do 12. strane ...dio rješenja je od 16. strane na dalje ...

Sva rješenja ovih zadataka šaljem^o besplatno u obliku PDF dokumenta mailom

dovoljno je da nam pošaljete mail na

našu adresu: mim-sraga@zg.htnet.hr s porukom da trebate kompletna rješenja zadataka iz potencija ...

21. Koristeći pravila: $a \cdot a = a^2$, $a \cdot a \cdot a = a^3$, $\underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_{n\text{-puta}} = a^n$

Izračunaj:

- | | |
|--|--|
| 1) $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$ | 2) $x \cdot x \cdot x$ |
| 3) $x \cdot y \cdot x \cdot y \cdot x \cdot z \cdot x \cdot y \cdot x \cdot x \cdot z$ | 4) $(xy) \cdot (xy) \cdot (xy)$ |
| 5) $(x+y) \cdot (x+y) \cdot (x+y) \cdot (x+y)$ | 6) $\left(\frac{x}{y}\right) \cdot \left(\frac{x}{y}\right) \cdot \left(\frac{x}{y}\right) \cdot \left(\frac{x}{y}\right)$ |
| 7) $(x-y) \cdot (x+y) \cdot (x-y) \cdot (x-y) \cdot (x+y)$ | 8) $\left(\frac{a-b}{c}\right) \cdot \left(\frac{a-b}{c}\right) \cdot \left(\frac{a-b}{c}\right)$ |

22. Koristeći pravila: $a^2 = a \cdot a$, $a^3 = a \cdot a \cdot a$, $a^n = \underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_{n\text{-puta}}$

Izračunaj:

- | | | | |
|---|--|--|-----------------------------------|
| 1) 5^2 | 2) 2^3 | 3) 3^4 | 4) $(-1)^2$ |
| 5) $(-1)^3$ | 6) $(-1)^4$ | 7) $(-2)^3$ | 8) $(-x)^4$ |
| 9) $\left(\frac{1}{3}\right)^2$ | 10) $\left(\frac{3}{5}\right)^3$ | 11) $\left(\frac{2}{3}\right)^5$ | 12) $\left(-\frac{2}{3}\right)^2$ |
| 13) $\left(-\frac{2}{3}\right)^3$ | 14) $\left(\frac{3}{4}\right)^4$ | 15) $\left(-\frac{4}{5}\right)^2$ | 16) $\left(-\frac{4}{5}\right)^3$ |
| 17) $\left(-\frac{4}{5}\right)^4$ | 18) $0,2^2$ | 19) $(-0,2)^2$ | 20) $0,2^3$ |
| 21) $(-0,2)^3$ | 22) $(-2,5)^2$ | 23) $(-2,5)^3$ | 24) $(-2,5)^4$ |
| 25) $(-1)^2 + (-1)^3 + (-1)^4 + (-1)^5$ | 26) $(-1)^{20} + (-1)^{30} + (-1)^{45}$ | | |
| 27) $(-2)^1 + (-2)^2 + (-2)^3 + (-2)^4$ | 28) $2^5 - 3^2$ | 29) $3^4 - 2^5$ | |
| 30) $(-2)^3 + (-2)^5$ | 31) $\left(\frac{1}{4}\right)^2 + \left(-\frac{1}{2}\right)^3$ | 32) $\left[(-0,2)^2 + (-0,2)^3\right]^2$ | |

23. Koristeći pravila: $\boxed{c \cdot a^n + d \cdot a^n = (c+d) \cdot a^n}$ $\boxed{c \cdot a^n - d \cdot a^n = (c-d) \cdot a^n}$

- | | | |
|---|--|--------------|
| 1) $2x + 3x$ | 2) $x + 2x + 4x$ | 3) $7a - 2a$ |
| 4) $9y - 2y + 3y - y$ | 5) $2x + 3a - x + 5a + 7x - 2a$ | |
| 6) $2xy + 3xy + xy$ | 7) $2ab - 4ab + ab$ | |
| 8) $4xy^2 + 2xy^2 - 9xy^2$ | 9) $y + 3x^2y - 4z - 5x^2y - 2y + 8z - 3y + 8x^2y$ | |
| 10) $7xy^3 - 2xy^3 + 4xy^3$ | 11) $2(x^2 + y) - 3(x^2 + y)$ | |
| 12) $3(x+y) + 4(x+y) - (x+y)$ | 13) $5x^2y^3 + 2z - 2x^2y^3 + 7z + 3x^2y^3 - 3z$ | |
| 14) $3(x^2 - 3x + 5) - 4(x^2 - 5x + 1)$ | 15) $3(x+y-1) - 6(x+y-1) + (x+y-1)$ | |

24. Koristeći pravila: $a^n \cdot a^m = a^{n+m}$ $a^n : a^m = a^{n-m}$ $\frac{a^n}{a^m} = a^n : a^m = a^{n-m}$

Izračunaj:

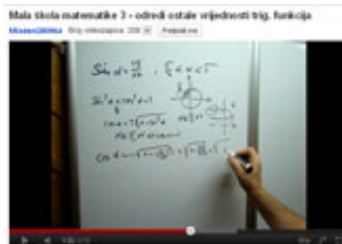
- | | | | |
|--|---|---|---|
| 1) $2^5 \cdot 2^3$ | 2) $5^2 \cdot 5^7$ | 3) $3^x \cdot 3^{2x}$ | 4) $7^{2m-5} \cdot 7^{m-2}$ |
| 5) $2^2 \cdot 2^6 \cdot 2^4 \cdot 2^8$ | 6) $3 \cdot a^4 \cdot 2 \cdot a^7$ | 7) $x^2 \cdot x^3$ | 8) $x \cdot x^3 \cdot x^5$ |
| 9) $x^2 \cdot x^4 \cdot x^6$ | 10) $x^{\frac{2}{3}} \cdot x^2 \cdot x^{\frac{5}{2}}$ | 11) $x^2 \cdot x^{2+a} \cdot x^{a-2} \cdot x^3$ | 12) $a^3 \cdot a^6$ |
| 13) $a^4 \cdot a^2 \cdot a$ | 14) $a^2 \cdot a^5 \cdot a^7 \cdot a^3$ | 15) $a^{3x} \cdot a^{x+2} \cdot a^{2x}$ | 16) $a^{x+y} \cdot a^{2x} \cdot a^{x+3y}$ |
| 17) $-2 \cdot x \cdot 6 \cdot x^3 \cdot 3 \cdot x^4$ | 18) $2 \cdot x^2 \cdot x^5 + 3 \cdot x^2 \cdot y^3 \cdot x \cdot y - 4 \cdot x \cdot x^6 + 2 \cdot x^3 \cdot y^2 \cdot y^2$ | | |
| 19) $\left(\frac{1}{2}\right)^2 \cdot \left(\frac{1}{2}\right)^3 \cdot \left(\frac{1}{2}\right)^4$ | 20) $x^{2m+1} \cdot x^{3m+2}$ | 21) $x^{2m-4} \cdot x^{3m+2}$ | |
| 22) $x^{\frac{3}{m+1}} \cdot x^{2m-7}$ | 23) $x^{m+n} \cdot x^{2m-n} \cdot x^{3m+2n}$ | 24) $x^{2m-n} \cdot x^{3m-n} \cdot x^{2m-2n}$ | |
| 25) $a^{2m+3n} \cdot a^{3m-5n}$ | 26) $2a^{m-3n+1} \cdot 3a^{4m+n-7}$ | 27) $2a^{x+y} \cdot 5a^{2x+y}$ | |
| 28) $\frac{2}{3}a^{3m+2n} \cdot \frac{9}{4}a^{2m-4n}$ | 29) $(x-y)^2 \cdot (x-y)$ | 30) $(x+y)^3 \cdot (x+y)^4$ | |
| 31) $(x+y-1)^{m+1} \cdot (x+y-1)^{2m+2} \cdot (x+y-1)^{3m-4}$ | | | |
| 32) $(x^{2m} - y^n) \cdot (x^m + y^{2n})$ | | | |
| 33) $(x+y)^2 \cdot (x-y)^3 \cdot (x+y)^{2m-1} \cdot (x-y)^{m-3}$ | | | |
| 34) $\left(\frac{ab^2}{c}\right)^{3x-2y} \cdot \left(\frac{ab^2}{c}\right)^{4x-y} \cdot \left(\frac{ab^2}{c}\right)^{x-y} \cdot \left(\frac{ab^2}{c}\right)^{3y-2x}$ | | | |

NOVO:
MALA ŠKOLA MATEMATIKE -1 na



DODATNE video UPUTE
UZ OVE ZADATKE

POTENCIJE
ALGEBARSKI IZRAZI
ALGEBARSKI RAZLOMCI



link: <http://www.mim-sraga.com/Mala-skola-matematike--video.htm>

25.

Pomnoži:

1) $2x^2y \cdot 3x^2y^3$

2) $5x^3y^2 \cdot 2x^5y^3$

3) $\frac{2}{3}a^2b^3 \cdot \frac{9}{4}ab^4$

4) $-\frac{5}{27}a^6b^2 \cdot \left(-\frac{9}{5}a^2b\right)$

5) $\frac{1}{2}a^2b^3c^4 \cdot (-4a^3b^2c^5)$

6) $9x^4y^2 \cdot \frac{1}{3}x^2y$

7) $25x^6y^4 \cdot \frac{yx^5}{5}$

8) $2x^2y^3z^4 \cdot (-3x^3y^4z^2)$

9) $x^2 \cdot (x^4 - x^3 - 3x^2 + 2x - 7)$

10) $(-2xy^2) \cdot \left(x^2y - \frac{1}{2}xy^3 + x^3y\right)$

Pogledaj dodatnu VIDEO uputu uz ovaj zadatak

<http://www.mim-sraga.com/potencije.htm>

ili

direktni link na : [video uputu ...uz 25. zadatak](#)

26. Izračunaj:

1) $2^9 : 2^5$

2) $13^7 : 13^5$

3) $3^{5x} : 3^{3x}$

4) $5^{3m-2} : 5^{m-2}$

5) $x^4 : x^2$

6) $x^6 : x^2$

7) $x^7 : x^2 : x^3$

8) $x^7 \cdot x^3 : x^4$

9) $x : x^2$

10) $x^2 : x^{\frac{1}{2}}$

11) $x^{\frac{7}{9}} : x^{\frac{1}{3}}$

12) $x^{\frac{2}{5}} : x^2 : x^{\frac{1}{2}}$

13) $a^{4x} : a^{2x}$

14) $a^8 : a^3 : a^2$

15) $a : a^2 : a^3$

16) $a^7 : a^2 \cdot a^3$

17) $\frac{x^5}{x^2}$

18) $\frac{x^8}{x^3}$

19) $\frac{x^{\frac{3}{2}}}{x}$

20) $\frac{x^{\frac{7}{4}}}{x^{\frac{1}{3}}}$

21) $\frac{x^{m+1}}{x^{2m+2}}$

22) $\frac{x^{3m+7}}{x^{3m+5}}$

23) $\frac{x^{8m+7}}{x^{3m+2}} : x^{m-1}$

24) $\frac{a^{9m+11}}{a^{2m-3}} : a^{7m+10}$

25) $(x-y)^7 : (x-y)^4$

26) $(2x-3y)^{2x+3y} : (2x-3y)^{2x+3y}$

27) $\left(\frac{a^2b}{c^3}\right)^6 : \left(\frac{a^2b}{c^3}\right)^4$

28) $(2x+y)^{2m-4} \cdot (2x+y)^{4m-2} : (2x+y)^{m-4}$

29) $\left(\frac{a^2b}{c^3}\right)^{x-2} \cdot \left(\frac{a^2b}{c^3}\right)^{3x-3} : \left(\frac{a^2b}{c^3}\right)^{4x-4}$

30) $(x^2-1) \cdot (x^4+x^2+1)$

31) $(x^2+1) \cdot (x-x^2+1)$

Pogledaj dodatnu VIDEO uputu uz ovaj zadatak

<http://www.mim-sraga.com/potencije.htm>

ili

direktni link na : [video uputu ...uz 26. zadatak](#)

27. Koristeći pravila: $(ab)^n = a^n b^n$ $(abc)^n = a^n b^n c^n$ $(a^n)^m = a^{n \cdot m}$ $((a^n)^m)^z = a^{n \cdot m \cdot z}$

Izračunaj:

- | | | | |
|--|--|--|---|
| 1) $(2x)^2$ | 2) $(3x)^2$ | 3) $\left(\frac{3}{4}x^2y^3\right)^2$ | 4) $\left(\frac{2}{3}xy^2\right)^3$ |
| 5) $\left(\frac{1}{2}x^2y^3\right)^4$ | 6) $(x^2)^2$ | 7) $(-x^2)^2$ | 8) $(x^2)^3$ |
| 9) $(x^2)^5$ | 10) $(2x^3y^4)^2$ | 11) $(2x^3y^4)^3$ | 12) $(2x^3y^4)^4$ |
| 13) $\left[(-y)^2\right]^3$ | 14) $(-y^2)^3$ | 15) $(-y^3)^2$ | 16) $-(-y^4)^3$ |
| 17) $-(-x^5)^2$ | 18) $\left[-(-x^5)\right]^2$ | 19) $\left[-(-x^5)^2\right]^2$ | 20) $-(x^5)^2$ |
| 21) $(2ab^2)^3$ | 22) $(a^2b^3)^4$ | 23) $(-2y^3)^2$ | 24) $(-3y^2)^3$ |
| 25) $\left(-\frac{2}{3}x^2\right)^2$ | 26) $\left(-\frac{2}{3}x^2\right)^3$ | 27) $(x^m)^2$ | 28) $(y^n)^3$ |
| 29) $(x^m y^n)^4$ | 30) $(x^m y^n)^m$ | 31) $(a^{3x} b^{2y})^2$ | 32) $(a^{3x} b^{2y})^x$ |
| 33) $(2^x)^2$ | 34) $(3^x)^3$ | 35) $(2^x)^x$ | 36) $(2^m 3^n)^2$ |
| 37) $\left((x^2)^3\right)^4$ | 38) $\left((y^3)^4\right)^5$ | 39) $\left((x^2)^x\right)^4$ | 40) $\left((y^3)^x\right)^y$ |
| 41) $\left((x^2)^6\right)^2 \cdot (x^3)^5$ | 42) $(y^3)^4 \cdot \left((y^5)^3\right)^2$ | 43) $\left((x^2)^5\right)^3 : (x^4)^7$ | 44) $\left((a^3)^6\right)^8 : \left((a^2)^4\right)^5$ |
| 45) $\left(\frac{2}{3}a^2b^3\right)^3 : (2ab^2)^2$ | 46) $\left(\frac{1}{2}x^2y^3\right)^3 \cdot (4x^3y^2)^3$ | 46) $\left(\frac{1}{2}x^2y^3\right)^3 : (4x^3y^2)^3$ | |
| 48) $(3a^2b)^x \cdot (a^x b^{3x})^2$ | 49) $(x^3)^{m+1}$ | 50) $(x^3)^{2m-1} \cdot (x^2)^{m-1}$ | |
| 51) $(x^5)^{2m-1} : (x^3)^{m+1}$ | 52) $2(x^2)^3 + 3(x^3)^2$ | 53) $(a^3)^4 - 3(a^2)^6 + 4(a^4)^3$ | |

Pogledaj dodatnu VIDEO uputu uz ovaj zadatak

<http://www.mim-sraga.com/potencije.htm>

ili

direktni link na : [video uputu ...uz 27. zadatak](#)

Samo zadaci su zadani od 3. do 12. strane ...dio rješenja je od 15. strane na dalje ...

**Sva rješenja ovih zadataka šaljemo besplatno
u obliku PDF dokumenta mailom**

dovoljno je da nam pošaljete mail na

našu adresu: mim-sraga@zg.htnet.hr s porukom da trebate
kompletna rješenja zadataka iz potencija ...

28. Koristeći pravilo: $a^n \cdot b^n = (a \cdot b)^n$ ili $a^n b^n c^n = (abc)^n$

Izračunaj:

1) $2^x \cdot 5^x$

2) $3^x \cdot 4^x$

3) $4^a \cdot 6^a$

4) $2^y \cdot 4^y$

5) $3^5 \cdot 2^5$

6) $\left(\frac{1}{3}\right)^3 \cdot 9^3$

7) $\left(\frac{3}{2}\right)^4 \cdot \left(\frac{2}{3}\right)^4$

8) $\left(\frac{1}{2}\right)^5 \cdot 4^5$

9) $\left(\frac{2}{3}\right)^5 \cdot \left(\frac{9}{2}\right)^5$

10) $\left(\frac{ac}{b}\right)^2 \cdot \left(\frac{b}{c}\right)^2$

11) $\left(\frac{a}{b}\right)^4 \cdot \left(\frac{b}{a}\right)^4$

12) $\left(\frac{3}{4}\right)^3 \cdot \left(\frac{8}{3}\right)^3$

13) $\left(\frac{xy}{2}\right)^2 \cdot \left(\frac{4}{x^2 y}\right)^2$

14) $\left(\frac{xy}{z}\right)^3 \cdot \left(\frac{x}{yz}\right)^3$

15) $\left(\frac{xy}{z}\right)^{m+1} \cdot \left(\frac{x}{yz}\right)^{m+1}$

16) $\left(\frac{x^2 y^3}{z^4}\right)^2 \cdot \left(\frac{z^6}{x^3 y^2}\right)^2$

17) $\left(\frac{x^2 y^3}{z^4}\right)^m \cdot \left(\frac{z^6}{x^3 y^2}\right)^m$

18) $\left(\frac{x-y}{x+1}\right)^5 \cdot \left(\frac{x^2-1}{x^2+2xy+y^2}\right)^5 \cdot \left(\frac{x+y}{x-y}\right)^5$

Pogledaj dodatnu VIDEO uputu uz ovaj zadatak

<http://www.mim-sraga.com/potencije.htm>

ili

direktni link na : video uputu ...uz 28. zadatak

Novo: **MALA ŠKOLA MATEMATIKE –1** na



**DODATNE video UPUTE
UZ OVE ZADATKE**

POTENCIJE
ALGEBARSKI IZRAZI
ALGEBARSKI RAZLOMCI

link: <http://www.mim-sraga.com/Mala-skola-matematike--video.htm>

29. Koristeći pravila: $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$ $\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n = \frac{b^n}{a^n}$

Izračunaj:

- | | | | |
|---|---|---|--|
| 1) $\left(\frac{2}{3}\right)^2$ | 2) $\left(\frac{2}{3}\right)^{-2}$ | 3) $\left(\frac{1}{2}\right)^3$ | 4) $\left(\frac{2}{3}\right)^4$ |
| 5) $\left(\frac{5}{7}\right)^{-1}$ | 6) $\left(1\frac{2}{7}\right)^{-1}$ | 7) $\left(\frac{4}{5}\right)^{-2}$ | 8) $\left(\frac{2}{3}\right)^{-3}$ |
| 9) $\left(2\frac{1}{3}\right)^{-2}$ | 10) $\left(1\frac{2}{7}\right)^{-2}$ | 11) $\left(1\frac{1}{2}\right)^{-3}$ | 12) $\left(\frac{3}{4}\right)^{-2}$ |
| 13) $\left(\frac{x}{y}\right)^2$ | 14) $\left(-\frac{x}{y}\right)^2$ | 15) $\left(-\frac{x}{y}\right)^3$ | 16) $\left(-\frac{x}{y}\right)^4$ |
| 17) $\left(1\frac{1}{2}\right)^2$ | 18) $\left(-2\frac{2}{3}\right)^2$ | 19) $\left(-2\frac{2}{3}\right)^3$ | 20) $\left(3\frac{4}{5}\right)^2$ |
| 21) $\left(\frac{x^2}{y^3}\right)^4$ | 22) $\left(-\frac{x^3}{y^4}\right)^3$ | 23) $\left(-\frac{x^3}{y^4}\right)^2$ | 24) $\left(\frac{x^2y^3}{z^4}\right)^2$ |
| 25) $\left(\frac{x^2y^5}{z^6}\right)^{-2}$ | 26) $\left(\frac{2x^4}{3y^2z}\right)^3$ | 27) $\left(\frac{x^{-2}y^3}{2^{-3}z^{-4}}\right)^3$ | 28) $\left(\frac{2x^4y^{-2}}{5z^3}\right)^2$ |
| 29) $\left(\frac{2x^4y^{-2}}{5z^3}\right)^{-2}$ | 30) $\left(\frac{2x^4y^{-2}}{5z^3}\right)^3$ | 31) $\left(\frac{x}{y}\right)^{-1}$ | 32) $\left(\frac{x}{y}\right)^{-2} \cdot \left(\frac{y}{x}\right)^3$ |
| 33) $\left(\frac{2x-3}{2x+3}\right)^{-3}$ | 34) $\left(\frac{1}{x-y}\right)^{-2}$ | 35) $\left(\frac{a^2b^5}{c^3}\right)^{-3}$ | 36) $\left(\frac{a^2}{y^3}\right)^3 \cdot \left(\frac{y}{a^3}\right)^2 \cdot \left(\frac{y^2}{a^4}\right)^2$ |
| 37) $\left(\frac{3}{2}\right)^{-2} \cdot 2^{-3} + 2^{-2}$ | 38) $\frac{1}{8} \cdot \left(\frac{3}{4}\right)^{-2}$ | | |
| 39) $\left(\frac{2}{3}\right)^{-1} + \left(\frac{1}{3}\right)^{-2} - \left(\frac{1}{2}\right)^{-3}$ | 40) $\left[\left(\frac{3}{4}\right)^{-2} \cdot \frac{2^{-2}}{3^{-3}}\right]^{-2} \cdot \left(\frac{3}{2}\right)^{-3}$ | | |

Pogledaj dodatnu VIDEO uputu uz ovaj zadatak

<http://www.mim-sraga.com/potencije.htm>

ili

direktni link na : video uputu ...uz 29. zadatak

30. Koristeći pravila: $a^0 = 1$, $a^1 = a$, $a^{-1} = \frac{1}{a}$, $a^{-n} = \frac{1}{a^n}$

Izračunaj:

- | | | | |
|--|---|---|-------------------------------------|
| 1) 2^0 | 2) x^0 | 3) $\left(\frac{x^2 y^4}{z}\right)^0$ | 4) $x^0 + y^0$ |
| 5) 3^0 | 6) $(-3)^0$ | 7) -3^0 | 8) $-3x^0$ |
| 9) $(x+y)^0$ | 10) $(2x-7y)^0$ | 11) $x^0 - 2y^0 + 7z^0$ | 12) $x^0 - (2y)^0 + (7z)^0$ |
| 13) $x^0 \cdot x^0$ | 14) $(x^0)^2$ | 15) $(x^m)^0$ | 16) $(4x)^0$ |
| 17) 5^{-1} | 18) x^{-1} | 19) $0,2^{-1}$ | 20) $(x-y)^{-1}$ |
| 21) 3^{-2} | 22) x^{-3} | 23) $0,3^{-2}$ | 24) $(2x-5)^{-5}$ |
| 25) 4^{-1} | 26) $\frac{1}{4^{-1}}$ | 27) $\frac{1}{(-4)^{-1}}$ | 28) $\left(\frac{2}{3}\right)^{-1}$ |
| 29) $\frac{2}{5^{-1}}$ | 30) $\frac{2}{(-5)^{-1}}$ | 31) $\frac{3}{2^{-2}}$ | 32) $\frac{2a}{b^{-4}}$ |
| 33) $3^{5x-4} \cdot 3^{4x-3} \cdot 3^{7-9x}$ | 34) $2^{2x+1} \cdot 2^3 \cdot 2^{2-3x} \cdot 2^{x-6}$ | 35) $5^{2x-3} \cdot 5^{2-2x}$ | |
| 36) $(x+y)^{2m-n} \cdot (x+y)^{n-2m}$ | 37) $27^0 \cdot x^0 \cdot y^0 \cdot 2^1 \cdot \left(\frac{1}{3}\right)^{-1}$ | | |
| 38) $y^0 \cdot 2^{-1} \cdot \left(\frac{1}{2}\right)^1 \cdot \left(\frac{1}{5}\right)^{-1} \cdot 2^{-3}$ | 39) $\left(\frac{a^2 b}{c^3}\right)^{m+n} : \left(\frac{a^2 b}{c^3}\right)^{m+2n} \cdot \left(\frac{a^2 b}{c^3}\right)^n$ | | |
| 40) $\left(\frac{2^{-3} - 2^{-1}}{2^{-2} + 2^{-4}}\right)^{-2}$ | 41) $\left(\frac{2^{-2} \cdot 3^{-1}}{2^{-1} \cdot 3^{-2}}\right)^{-2}$ | 42) $\left(\frac{2^{-2} - 3^{-1}}{2^{-1} + 3^{-2}}\right)^{-2}$ | |
| 43) $3^0 \cdot 2^0 - 3^1$ | 44) $3^0 + 2^0 - 3^1$ | 45) $2^0 + 2^1 - 2^{-2}$ | |
| 46) $2^{-2} - 2^{-3}$ | 47) $2^{-3} - 2^{-2} + 2^{-1}$ | 48) $3^{-2} - 2^{-3}$ | |
| 49) $\frac{2^{-2}}{3^{-3}}$ | 50) $\frac{2^3 \cdot 3^{-2}}{4^2}$ | 51) $\frac{2^2 \cdot 4^{-1}}{3^2 \cdot 6^{-1}}$ | |
| 52) $\frac{a^{-1}}{b^{-1}}$ | 53) $\frac{a^{-2}}{b^{-2}}$ | 54) $\frac{a^{-1} b}{c^{-1}}$ | |
| 55) $\frac{a^2 b^{-3}}{c^{-1} d^2}$ | 56) $\frac{x^{-1} b c^2}{y^{-2} c^3 d^{-1}}$ | 57) $\frac{x^{-1} b^{-2} c^2}{y^2 c^{-3} d^{-1}}$ | |

31.

a) Zapiši u obliku potencija s bazom 2:

1) $4 \cdot 32 \cdot 16$

2) $(4 \cdot 8 \cdot 16)^2$

3) $(2^3 \cdot 4^2 \cdot 8)^3$

b) Zapiši u obliku potencija s bazom 3:

1) $(3 \cdot 9 \cdot 27)^4$

2) $(9 \cdot 81 \cdot 3)^2$

3) $(3^5 \cdot 9^3 \cdot 27^2)^3$

c) Pojednostavni i rezultati zapiši kao potenciju:

1) $2^3 + 2^3$

2) $3 \cdot 2^5 + 2^5$

3) $6 \cdot 2^4 - 2 \cdot 4^4$

4) $5 \cdot 3^2 - 3 \cdot 3^2$

5) $3 \cdot 5^3 + 2 \cdot 5^3$

32.

1) $\left(\frac{9}{2}x^6y^5\right) : \left(\frac{3}{2}x^4y^3\right)$

2) $\left(\frac{4}{3}x^7y^3\right) : \left(\frac{2}{15}x^5y^2\right)$

3) $\left(-\frac{5}{7}x^8y^3\right) : \left(-\frac{1}{7}x^3y^3\right)$

4) $\left(\frac{25}{49}a^9b^6c^5\right) : \left(\frac{5}{7}a^6b^3c^4\right)$

33.

1) $\frac{16 \cdot 2^{x+1}}{8^{x-1}}$

2) $\frac{4^{x-1}16^{x+2}}{32^{1-x}}$

3) $\frac{9^x \cdot 27^{x-1}}{81^{x+1}}$

4) $\frac{25^{x+1} \cdot 5^{x+5}}{125^{3-x}}$

34.

1) $\left(\frac{x^{-2}}{y^{-3}}\right)^{-2} \cdot \left(\frac{x^4}{y^2}\right)^2$

2) $\left(\frac{x^{-2}}{y^{-3}}\right)^2 \cdot \left(\frac{x^4}{y^2}\right)^2$

3) $\left(\frac{3x^3}{2y^4}\right)^3 \cdot \left(\frac{4x^2}{3y^3}\right)^2$

4) $\left(\frac{3x^3}{2y^4}\right)^3 \cdot \left(\frac{3x^2}{4y^3}\right)^{-2}$

5) $\left(-\frac{5a^7b^2}{6c^3}\right)^{-2} \cdot \left(\frac{5a^2}{3b^3c^2}\right)^2$

6) $\left(-\frac{3x^2y^3}{5z^4}\right)^4 \cdot \left(\frac{3x^6y^2}{5z^2}\right)^{-2}$

35.

1) $(x^2)^3$

2) $(2x^4)^2$

3) $(a^2b^5)^2$

4) $(4ab^2)^2$

5) $(2x^2y^3)^3$

6) $(3x^2 + y^3)^2$

7) $(a^2b^3 - 4c^4)^2$

8) $(a^2 - b^3c^2)(a^2 + b^3c^2)$

9) $(2a^3 + b^2)^3$

10) $(2x^2y^3 + 3xy^2)^2$

35. b)

1) $(x^2)^3$

2) $(y^4)^2$

3) $(a^2b^3)^2$

4) $(a^3b^5)^2$

5) $a^2b^3 \cdot a^3b^5$

6) $(x^3 + y^4)^2$

7) $(a^2b^3 - a^3b^5)^2$

8) $(a^2b^3 - a^3b^5) \cdot (a^2b^3 + a^3b^5)$

9) $(x^3y^2 + x^2y^4)^3$

36 . I sada primjenom svih pravila za potencije riješite dopunske zadatke

POTENCIJE

$$c \cdot a^n \pm d \cdot a^n = (c \pm d) \cdot a^n$$

$a^n \cdot a^m = a^{n+m}$	$(abc)^n = a^n b^n c^n$	$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$	$a^1 = a$
$a^n : a^m = a^{n-m}$	$(a^n)^m = a^{n \cdot m}$	$\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n = \frac{b^n}{a^n}$	$a^{-1} = \frac{1}{a}$
$\frac{a^n}{a^m} = a^n : a^m = a^{n-m}$	$\left((a^n)^m\right)^z = a^{n \cdot m \cdot z}$	$a^0 = 1$	$a^{-n} = \frac{1}{a^n}$

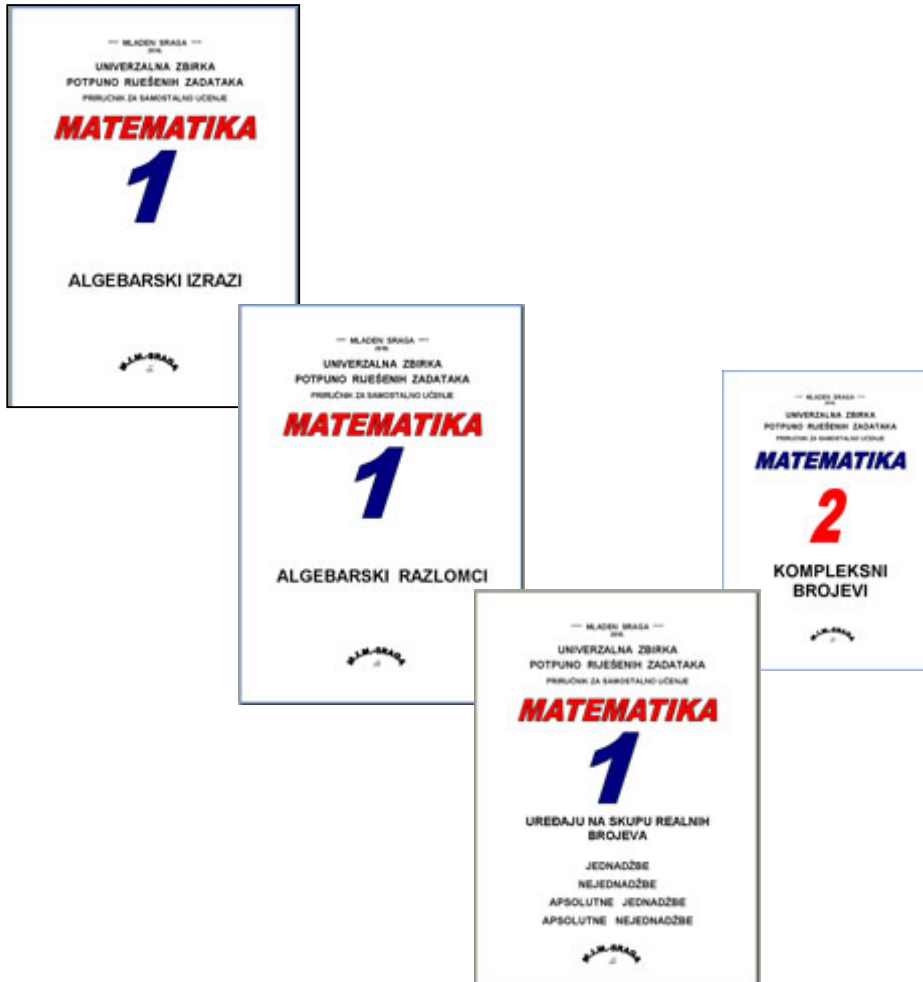
36.

Izračunaj:

- 1) $2x^2 \cdot x^3 + 5x \cdot x^4$
- 2) $\frac{1}{3}x^7 \cdot x^2 - \frac{2}{5}x^{17} : x^8$
- 3) $(a^3 \cdot a^4)^2$
- 4) $(a^2 \cdot a^4 \cdot a^5)^3$
- 5) $(a^8 : a^4)^2$
- 6) $(a^7 : a^5)^6$
- 7) $(a^2)^3 : (a^2)^2$
- 8) $(x^7)^2 : (x^3)^4$
- 9) $25x^9 y^4 : 5x^7 y^2$
- 10) $\left(\frac{1}{47}x \cdot 7x^5 : \frac{1}{7}x^6\right)^{2m+3}$
- 11) $2a^2 b^3 c^4 \cdot 3a^4 b^3 c \cdot 4ab^4 c^2$
- 12) $a^4 \cdot a^3 + 3a^2 \cdot a^5 + 4a \cdot a^6$
- 13) $2x^5 \cdot x^4 + 5x^7 \cdot x^2 - 3x^3 \cdot y^6$
- 14) $7x^5 \cdot x^3 + 2x^{10} : x^2 - 3x^3 \cdot y^5$
- 15) $3x^4 y^{2b} z^m \cdot 2x^{m-2} y^{3b} z^2$
- 16) $x^{m+3} y^{4n-1} : x^{m+2} y^{1-2n}$
- 17) $x^{m+n-3} \cdot x^{2m-3n+2} : x^{m+2n-1}$
- 18) $(a^{3x})^4 \cdot (a^2)^{6x} \cdot (a^{4x})^3$
- 19) $(a^{3x})^4 \cdot (a^2)^{6x} : (a^{4x})^3$
- 20) $(a^{3x})^4 + 3(a^2)^{6x} - 2(a^{4x})^3$
- 21) $(x^7 y^2 : x^3 y^3)^4$
- 22) $(x^7 y^2)^2 : (x^3 y^3)^3$
- 23) $(a^2 b^3)^4 \cdot (a^2 b^4)^3$
- 24) $(x+1)^0 + 3^0 - 4x^0$
- 25) $(x^0 + 2) \cdot (x+2)^0$
- 26) $(x^0 y - xy^0) \cdot (xy - x^2 y^3)^0$
- 27) $2x^0 + 3y^0 - (5xy)^0$
- 28) $\frac{3xy^0}{2x^0 y}$
- 29) $\frac{3+x^0}{y^0 - 2}$
- 30) $\frac{x^2 y^0 3^1}{(xy)^0}$
- 31) $x^{-5} \cdot x^2$
- 32) $x^{-4} : x^2$
- 33) $x^{-3} \cdot x^{-2} : x$
- 34) $x^8 : x^{-3}$
- 35) $12x^{-9} : 3x^{-2}$

Rješenja su od 16.strane na dalje...

Iz naše ponude izdvajamo
Zbirke potpuno riješenih zadataka priručnici za samostalno učenje:
Matematika-1-prvo polugodište:



Sve dodatne informacije o ovim zbirkama
zatražite na mail: mim-sraga@zg.htnet.hr

ili na naše telefone 01-4578-431 , 4579-130

Dodatne informacije i PDF ogleadne primjerke
potražite na našoj web-stranici : www.mim-sraga.com

Novo: **MALA ŠKOLA MATEMATIKE –1** na



BESPLATNA video poduka i instrukcije

UČIMO ZAJEDNO

POTENCIJE

ALGEBARSKI IZRAZI

ALGEBARSKI RAZLOMCI

link: <http://www.mim-sraga.com/Mala-skola-matematike--video.htm>



Rješenja svih zadataka s kompletnim postupkom i uputama

21. Koristimo pravila: $a \cdot a = a^2$, $a \cdot a \cdot a = a^3$, $\underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_{n\text{-puta}} = a^n$

Uputa: Prebrojite koliko se puta ponavlja isti faktor i taj broj stavite u eksponent:

1) $\underbrace{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}_{2\text{-se ponavlja pet puta pa u eksponent pišemo } 5} = 2^5 \quad \rightarrow \text{čitamo: dva na petu}$

Pogledaj dodatnu VIDEO uputu uz ovaj zadatak
<http://www.mim-sraga.com/potencije.htm>
 ili
 direktni link na : [video uputu ...uz 21. zadatak](#)

1) $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 2^5$

2) $x \cdot x \cdot x = x^3$

3) $x \cdot y \cdot x \cdot y \cdot x \cdot z \cdot x \cdot y \cdot x \cdot x \cdot z = x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot z \cdot z = x^6 \cdot y^3 \cdot z^2 = x^6 y^3 z^2$

grupiramo iste faktore...

4) $(xy) \cdot (xy) \cdot (xy) = (xy)^3$

5) $(x+y) \cdot (x+y) \cdot (x+y) \cdot (x+y) = (x+y)^4$

6) $\left(\frac{x}{y}\right) \cdot \left(\frac{x}{y}\right) \cdot \left(\frac{x}{y}\right) \cdot \left(\frac{x}{y}\right) = \left(\frac{x}{y}\right)^4$

7) $(x-y) \cdot (x+y) \cdot (x-y) \cdot (x-y) \cdot (x+y) =$
 $= (x-y) \cdot (x-y) \cdot (x-y) \cdot (x+y) \cdot (x+y) = (x-y)^3 \cdot (x+y)^2$

8) $\left(\frac{a-b}{c}\right) \cdot \left(\frac{a-b}{c}\right) \cdot \left(\frac{a-b}{c}\right) = \left(\frac{a-b}{c}\right)^3$

22. Koristimo pravila: $a^2 = a \cdot a$, $a^3 = a \cdot a \cdot a$, $a^n = \underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_{n\text{-puta}}$

1) $5^2 = 5 \cdot 5 = 25$

2) $2^3 = 2 \cdot 2 \cdot 2 = 8$

3) $3^4 = 3 \cdot 3 \cdot 3 \cdot 3 = 81$

4) $(-1)^2 = (-1) \cdot (-1) = 1$

5) $(-1)^3 = (-1) \cdot (-1) \cdot (-1) = -1$

6) $(-1)^4 = (-1) \cdot (-1) \cdot (-1) \cdot (-1) = 1$

}

Zaključak: $(-1)^{\text{na parni eksponent}} = 1$
 $(-1)^{\text{na neparni eksponent}} = -1$

7) $(-2)^3 = \underbrace{(-2) \cdot (-2) \cdot (-2)}_{\downarrow} = -8$

Imamo neparan broj "minusa" pa će i umnožak biti negativno tj. imati će predznak minus

8) $(-x)^4 = \underbrace{(-x) \cdot (-x) \cdot (-x) \cdot (-x)}_{\substack{\text{Imamo paran broj "minusa" pa} \\ \text{je produkt pozitivan broj}}} = x^4$

22. Koristimo pravila: $a^2 = a \cdot a$, $a^3 = a \cdot a \cdot a$, $a^n = \underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_{n\text{-puta}}$

$$9) \left(\frac{1}{3}\right)^2 = \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{9}$$

$$10) \left(\frac{3}{5}\right)^3 = \frac{3}{5} \cdot \frac{3}{5} \cdot \frac{3}{5} = \frac{27}{125}$$

$$11) \left(\frac{2}{3}\right)^5 = \frac{2}{3} \cdot \frac{2}{3} \cdot \frac{2}{3} \cdot \frac{2}{3} \cdot \frac{2}{3} = \frac{32}{243}$$

$$12) \left(-\frac{2}{3}\right)^2 = \left(-\frac{2}{3}\right) \cdot \left(-\frac{2}{3}\right) = \frac{2 \cdot 2}{3 \cdot 3} = \frac{4}{9}$$

$$13) \left(-\frac{2}{3}\right)^3 = \left(-\frac{2}{3}\right) \cdot \left(-\frac{2}{3}\right) \cdot \left(-\frac{2}{3}\right) = -\frac{2 \cdot 2 \cdot 2}{3 \cdot 3 \cdot 3} = -\frac{8}{27}$$

$$14) \left(\frac{3}{4}\right)^4 = \frac{3}{4} \cdot \frac{3}{4} \cdot \frac{3}{4} \cdot \frac{3}{4} = \frac{81}{256}$$

$$15) \left(-\frac{4}{5}\right)^2 = \left(-\frac{4}{5}\right) \cdot \left(-\frac{4}{5}\right) = +\frac{4 \cdot 4}{5 \cdot 5} = \frac{16}{25}$$

$$16) \left(-\frac{4}{5}\right)^3 = \left(-\frac{4}{5}\right) \cdot \left(-\frac{4}{5}\right) \cdot \left(-\frac{4}{5}\right) = -\frac{4 \cdot 4 \cdot 4}{5 \cdot 5 \cdot 5} = -\frac{64}{125}$$

$$17) \left(-\frac{4}{5}\right)^4 = \left(-\frac{4}{5}\right) \cdot \left(-\frac{4}{5}\right) \cdot \left(-\frac{4}{5}\right) \cdot \left(-\frac{4}{5}\right) = +\frac{4 \cdot 4 \cdot 4 \cdot 4}{5 \cdot 5 \cdot 5 \cdot 5} = \frac{256}{625}$$

$$18) 0,2^2 = 0,2 \cdot 0,2 = 0,04$$

$$19) (-0,2)^2 = (-0,2) \cdot (-0,2) = +0,2 \cdot 0,2 = 0,04$$

$$20) 0,2^3 = 0,2 \cdot 0,2 \cdot 0,2 = 0,04 \cdot 0,2 = 0,008$$

$$21) (-0,2)^3 = (-0,2) \cdot (-0,2) \cdot (-0,2) = -(0,2 \cdot 0,2 \cdot 0,2) = -0,008$$

$$22) (-2,5)^2 = (-2,5) \cdot (-2,5) = +(2,5 \cdot 2,5) = 6,25$$

Pogledaj dodatnu VIDEO uputu uz ovaj zadatak
<http://www.mim-sraga.com/potencije.htm>
 ili
 direktni link na : [video uputu ...uz 22. zadatak](#)

22. Koristimo pravila: $a^2 = a \cdot a$, $a^3 = a \cdot a \cdot a$, $a^n = \underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_{n\text{-puta}}$

$$23) (-2,5)^3 = (-2,5) \cdot (-2,5) \cdot (-2,5) = -(2,5 \cdot 2,5 \cdot 2,5) = 15,625$$

$$24) (-2,5)^4 = (-2,5) \cdot (-2,5) \cdot (-2,5) \cdot (-2,5) = +(2,5 \cdot 2,5 \cdot 2,5 \cdot 2,5) = 39,0625$$

$$25) (-1)^2 + (-1)^3 + (-1)^4 + (-1)^5 = \underbrace{+1 + (-1)}_0 + \underbrace{(+1) + (-1)}_0 = 0 + 0 = 0$$

$$26) (-1)^{20} + (-1)^{30} + (-1)^{45} = +1 \cdot (+1) \cdot (-1) = -1$$

$$27) (-2)^1 + (-2)^2 + (-2)^3 + (-2)^4 = -2 + 4 - 8 + 16 = 4 + 16 - 2 - 8 = 10$$

$$28) 2^5 - 3^2 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 - 3 \cdot 3 = 32 - 9 = 23$$

$$29) 3^4 - 2^5 = 3 \cdot 3 \cdot 3 \cdot 3 - 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 81 - 32 = 49$$

$$30) (-2)^3 + (-2)^5 = (-2) \cdot (-2) \cdot (-2) + (-2) \cdot (-2) \cdot (-2) \cdot (-2) \cdot (-2) = -8 - 32 = -40$$

$$31) \left(\frac{1}{4}\right)^2 + \left(-\frac{1}{2}\right)^3 = \frac{1}{4} \cdot \frac{1}{4} + \left(-\frac{1}{2}\right) \cdot \left(-\frac{1}{2}\right) \cdot \left(-\frac{1}{2}\right) = \frac{1}{16} - \frac{1}{8} = \frac{1-2}{16} = -\frac{1}{16}$$

$$32) \left[(-0,2)^2 + (-0,2)^3\right]^2 = \left[(-0,2) \cdot (-0,2) + (-0,2) \cdot (-0,2) \cdot (-0,2)\right]^2 = \\ = (0,04 - 0,008)^2 = 0,032^2 = 0,001024$$

Pogledaj dodatnu VIDEO uputu uz ovaj zadatak
<http://www.mim-sraga.com/potencije.htm>
 ili
 direktni link na : [video uputu ...uz 22. zadatak](#)

23. Koristimo pravila:

$c \cdot a + d \cdot a = (c + d) \cdot a$	$c \cdot a - d \cdot a = (c - d) \cdot a$
$c \cdot a^n + d \cdot a^n = (c + d) \cdot a^n$	$c \cdot a^n - d \cdot a^n = (c - d) \cdot a^n$

1) $2x + 3x = (2 + 3) \cdot x = 5 \cdot x = 5x$

$$\left. \begin{array}{l} 5 \cdot x \\ \text{ili} \\ 5x \end{array} \right\} \text{ je potpuno isti izraz...}$$

2) $x + 2x + 4x = (1 + 2 + 4) \cdot x = 7x$

ili taj isti zadatak na malo duži ali sigurniji način:

$$x + 2x + 4x = 1x + 2x + 4x = (1 + 2 + 4) \cdot x = 7x \quad \text{Dakle: } x = 1x$$

Praksa je pokazala da velika većina đaka radi istu grešku: uzimate da je: $x = 0x$ što nije točno!!

dakle vi kada računate u glavi grešite na ovaj način:

$$x + 2x + 4x = 6x \quad \text{ili} \quad x + 2x + 4x = (0 + 2 + 4) \cdot x = 6x \quad \text{što nije točno!!!}$$

Jednom zauvijek treba zapamtiti $x = 1x$ pa to u zadatku treba izgledati ovako:

$$x + 2x + 4x = 1x + 2x + 4x = (1 + 2 + 4) \cdot x = 7x$$

3) $7a - 2a = (7 - 2) \cdot a = 5 \cdot a = 5a$

4) $9y - 2y + 3y - y = (9 - 2 + 3 - 1) \cdot y = 9 \cdot y = 9y$

ili taj isti zadatak na malo duži ali sigurniji način:

$$9y - 2y + 3y - y = 9y - 2y + 3y - 1y = (9 - 2 + 3 - 1) \cdot y = 9y$$

5) $2x + 3a - x + 5a + 7x - 2a =$

$$= 2x - x + 7x + 3a + 5a - 2a = (2 - 1 + 7) \cdot x + (3 + 5 - 2) \cdot a = 8 \cdot x + 6 \cdot a = 8x + 6a$$

6) $2xy + 3xy + xy = (2 + 3 + 1) \cdot xy = 6xy$

7) $2ab - 4ab + ab = (2 - 4 + 1) \cdot ab = -1 \cdot ab = -ab$

8) $4xy^2 + 2xy^2 - 9xy^2 = (4 + 2 - 9) \cdot xy^2 = -3 \cdot xy^2 = -3xy^2$

9) $y + 3x^2y - 4z - 5x^2y - 2y + 8z - 3y + 8x^2y =$

$$= y - 2y - 3y + 8z - 4z + 3x^2y - 5x^2y + 8x^2y =$$

$$= (1 - 2 - 3) \cdot y + (8 - 4) \cdot z + (3 - 5 + 8) \cdot x^2y =$$

$$= -4 \cdot y + 4 \cdot z + 6 \cdot x^2y =$$

$$= -4y + 4z + 6x^2y$$

$$\left. \begin{array}{l} \\ \\ \\ \end{array} \right\} \text{ Ovo je potpuno isti izraz}$$

23. Koristimo pravila:

$c \cdot a + d \cdot a = (c + d) \cdot a$	$c \cdot a - d \cdot a = (c - d) \cdot a$
$c \cdot a^n + d \cdot a^n = (c + d) \cdot a^n$	$c \cdot a^n - d \cdot a^n = (c - d) \cdot a^n$

$$10) \quad 7xy^3 - 2xy^3 + 4xy^3 = (7 - 2 + 4) \cdot xy^3 = 9 \cdot xy^3 = 9xy^3$$

$$11) \quad 2(x^2 - y) - 3(x^2 + y) = (2 - 3) \cdot (x^2 + y) = -1 \cdot (x^2 + y) = -x^2 - y$$

$$12) \quad 3(x + y) + 4(x + y) - (x + y) = (3 + 4 - 1) \cdot (x + y) = 6(x + y)$$

ili taj isti zadatak na malo duži ali sigurniji način:

$$\begin{aligned} 3(x + y) + 4(x + y) - (x + y) &= 3(x + y) + 4(x + y) - 1(x + y) = \\ &= (3 + 4 - 1) \cdot (x + y) = \\ &= 6(x + y) \end{aligned}$$

$$\begin{aligned} 13) \quad 5x^2y^3 + 2z - 2x^2y^3 + 7z + 3x^2y^3 - 3z &= \\ &= 5x^2y^3 - 2x^2y^3 + 3x^2y^3 + 2z + 7z = \\ &= (5 - 2 + 3) \cdot x^2y^3 + (2 + 7) \cdot z = \\ &= 6 \cdot x^2y^3 + 9 \cdot z = \\ &= 6x^2y^3 + 9z \end{aligned}$$

$$\begin{aligned} 14) \quad 3(x^2 - 3x + 5) - 4(x^2 - 5x + 1) &= \\ &= (3 - 4) \cdot (x^2 - 3x + 5) = \\ &= -1 \cdot (x^2 - 3x + 5) = \\ &= -x^2 + 3x - 5 \end{aligned}$$

$$15) \quad 3(x + y - 1) - 6(x + y - 1) + (x + y - 1) = (3 - 6 + 1) \cdot (x + y - 1) = -2(x + y - 1)$$

ili taj isti zadatak na malo duži ali sigurniji način:

$$\begin{aligned} 3(x + y - 1) - 6(x + y - 1) + (x + y - 1) &= 3(x + y - 1) - 6(x + y - 1) + 1(x + y - 1) = \\ &= (3 - 6 + 1) \cdot (x + y - 1) = \\ &= -2(x + y - 1) \end{aligned}$$

24. Koristimo pravila:

$$a^n \cdot a^m = a^{n+m} \quad a^n : a^m = a^{n-m} \quad \frac{a^n}{a^m} = a^n : a^m = a^{n-m}$$

1) $2^5 \cdot 2^3 = 2^{5+3} = 2^8$

2) $5^2 \cdot 5^7 = 5^{2+7} = 5^9$

3) $3^x \cdot 3^{2x} = 3^{x+2x} = 3^{3x}$

4) $7^{2m-5} \cdot 7^{m-2} = 7^{2m-5+m-2} = 7^{2m+m-5-2} = 7^{3m-7}$

5) $2^2 \cdot 2^6 \cdot 2^4 \cdot 2^8 = 2^{2+6+4+8} = 2^{20}$

6) $3 \cdot a^4 \cdot 2 \cdot a^7 = 3 \cdot 2 \cdot a^4 \cdot a^7 = 6 \cdot a^{4+7} = 6a^{11}$

7) $x^2 \cdot x^3 = x^{2+3} = x^5$

8) $x \cdot x^3 \cdot x^5 = x^1 \cdot x^3 \cdot x^5 = x^{1+3+5} = x^9$

Pazi $x = x^1$

9) $x^2 \cdot x^4 \cdot x^6 = x^{2+4+6} = x^{12}$

10) $x^{\frac{2}{3}} \cdot x^2 \cdot x^{\frac{5}{2}} = x^{\frac{2}{3}+2+\frac{5}{2}} = x^{\frac{2 \cdot 2+2 \cdot 6+5 \cdot 3}{6}} = x^{\frac{4+12+15}{6}} = x^{\frac{31}{6}}$

11) $x^2 \cdot x^{2+a} \cdot x^{a-2} \cdot x^3 = x^{2+2+a+a-2+3} = x^{a+a+2+2-2+3} = x^{2a+5}$

12) $a^3 \cdot a^6 = a^{3+6} = a^9$

13) $a^4 \cdot a^2 \cdot a = a^4 \cdot a^2 \cdot a^1 = a^{4+2+1} = a^7$ Pazi $a = a^1$

Dosta često radite ovakve greške:

$$\left. \begin{array}{l} a^4 \cdot a^2 \cdot a = a^{4+2} = a^6 \\ a^4 \cdot a^2 \cdot a = a^{4+2+0} = a^6 \end{array} \right\} \text{što nije točno jer je: } a = a^1$$

14) $a^2 \cdot a^5 \cdot a^7 \cdot a^3 = a^{2+5+7+3} = a^{17}$

15) $a^{3x} \cdot a^{x+2} \cdot a^{2x} = a^{3x+x+2+2x} = a^{6x+2}$

16) $a^{x+y} \cdot a^{2x} \cdot a^{x+3y} = a^{x+y+2x+x+3y} = a^{x+2x+x+y+3y} = a^{4x+4y}$

17) $-2 \cdot x \cdot 6 \cdot x^3 \cdot 3 \cdot x^4 = -2 \cdot 6 \cdot 3 \cdot x^1 \cdot x^3 \cdot x^4 = -36 \cdot x^{1+3+4} = -36x^8$

**Rješenja svih zadataka šaljemo besplatno
u obliku PDF dokumenta mailom
dovoljno je da nam pošaljete mail na
našu adresu: mim-sraga@zg.htnet.hr s porukom da trebate
kompletna rješenja zadataka iz potencija ...**

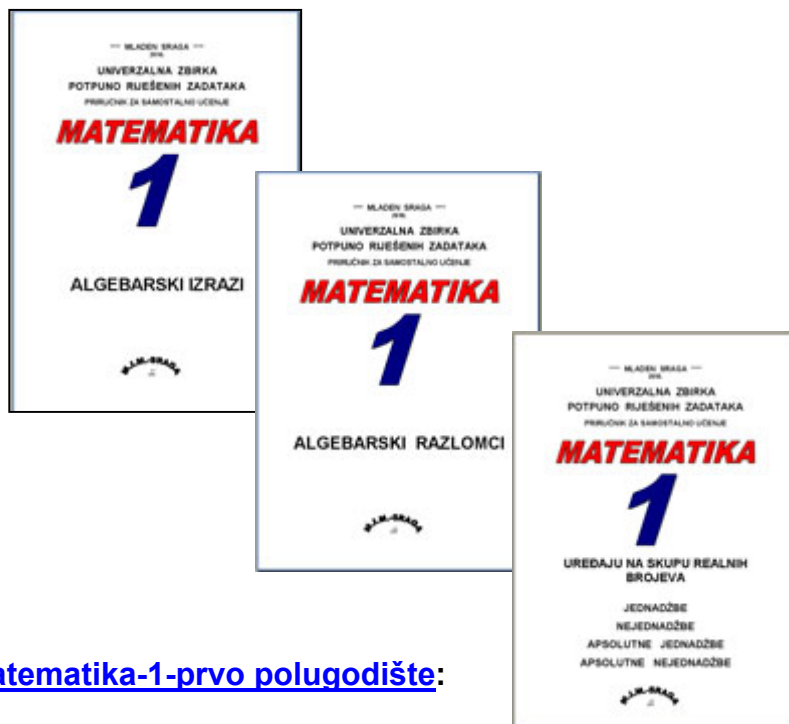
24. Koristimo pravila: $a^n \cdot a^m = a^{n+m} \quad a^n : a^m = a^{n-m} \quad \frac{a^n}{a^m} = a^n : a^m = a^{n-m}$

24.rješenj od 18) do 32) zadatka naručite preko maila !

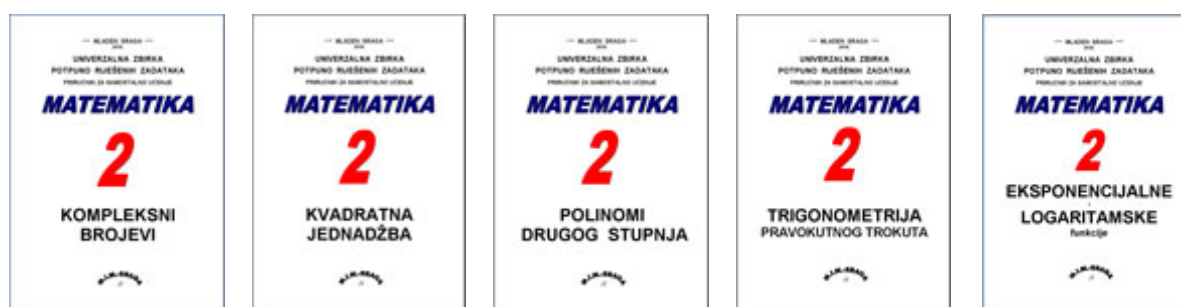
$$\begin{aligned}
 33) \quad (x+y)^2 \cdot (x-y)^3 \cdot (x+y)^{2m-1} \cdot (x-y)^{m-3} &= (x+y)^2 \cdot (x+y)^{2m-1} \cdot (x-y)^3 \cdot (x-y)^{m-3} = \\
 &= (x+y)^{2+2m-1} \cdot (x-y)^{3+m-3} = \\
 &= (x+y)^{2m+2-1} \cdot (x-y)^{m+3-3} = \\
 &= (x+y)^{2m+1} \cdot (x-y)^m
 \end{aligned}$$

$$\begin{aligned}
 34) \quad \left(\frac{ab^2}{c}\right)^{3x-2y} \cdot \left(\frac{ab^2}{c}\right)^{4x-y} \cdot \left(\frac{ab^2}{c}\right)^{x-y} \cdot \left(\frac{ab^2}{c}\right)^{3y-2x} &= \left(\frac{ab^2}{c}\right)^{3x-2y+4x-y+x-y+3y-2x} = \\
 &= \left(\frac{ab^2}{c}\right)^{3x+4x+x-2x-2y-y-y+3y} = \\
 &= \left(\frac{ab^2}{c}\right)^{6x-y}
 \end{aligned}$$

Iz naše ponude izdvajamo
Zbirke potpuno riješenih zadataka priručnici za samostalno učenje:
[Matematika-1-prvo polugodište:](#)



[Matematika-1-prvo polugodište:](#)



[Matematika –2-](#) univerzalna zbirka potpuno riješenih zadataka

Sve dodatne informacije o ovim zbirkama
zatražite na mail: mim-sraga@zg.htnet.hr

ili na naše telefone 01-4578-431 , 4579-130

Dodatne informacije i PDF ogledne primjerke
potražite na našoj web-stranici : www.mim-sraga.com

KOMPLETNA RJEŠENJA SVIH OVIH ZADATAKA KOJI SU ZADANI NA PRVIH 12 –STRANICA
ŠALJEMO mailom u obliku PDF dokumeta
dovoljno je da nam pošaljete mail na : mim-sraga@zg.htnet.hr s porukom da trebate kompletna rješenja POTENCIJA

Novo MALA ŠKOLA MATEMATIKE 1 na



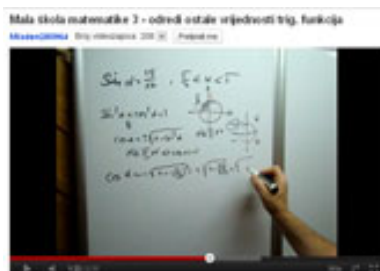
BESPLATNA **video poduka** i instrukcije

UČIMO ZAJEDNO

POTENCIJE

ALGEBARSKI IZRAZI

ALGEBARSKI RAZLOMCI



link: <http://www.mim-sraga.com/Mala-skola-matematike--video.htm>