7-Mavzu. Algebraik ifodalar (Takrorlash)

Birhad

1. Birhadni standart ko‘rinishda yozing:

1) $2a^2 6a$	2) $2a^3 4a^5$	3) $0,5a0,6a^4$	4) $0,3a^7 8a^9$
5) $-2b^3(-6)b$	6) $2c^3(-4)a^5$	7) $0,5a(-0,6)b^4$	8) $-0,3x^7 8y^9$

2. Birhadlarni ko‘paytiring:

1) $(22a^2)(6b)$	2) $(0,2c^3)(-4d^5)$	3) $(-0,5z)(0,6x^4)$	4) $(0,3x^7)(8y^9)$
5) $\left(\frac{1}{3}b^3\right)(-6xy)$	6) $\left(\frac{2}{5}x^2yz\right)\left(-\frac{15}{4}xz^2\right)$	7) $\left(\frac{2}{3}acb^3\right)(-6a^2c^2)$	8) $\left(\frac{4}{3}xb^2\right)(-6xy)$

3. Birhadni darajaga oshiring:

1) $(2xy^2)^3$	2) $(3ab^2c^3)^4$	3) $(-0,5xy^2z)^2$	4) $(5a^2xy^2)^3$
5) $\left(\frac{2}{3}xy^2\right)^3$	6) $\left(\frac{3}{5}a^4b^2z\right)^4$	7) $\left(\frac{2}{3}a^2b^3z^5\right)^4$	8) $\left(\frac{3}{5}axz^2\right)^5$

Ko‘phad

4. Ko‘phadni uning har bir hadini standart ko‘rinishga keltirib soddalashtiring:

1) $12a^2 3ba - 2ab3a^2b + 3ab^2 2a^2$	2) $10a^2 2ba - 12ab2a^2b + 4ab^2 2a^2$
3) $8a^2 4ba - 15ab2a^2b - 9ab^2 2a$	4) $7a^2 3b^2 a - 2ab3a^2b - 4ab^2 2a^2$

5. Ko‘phadni soddalashtiring:

1) $3a^2b - 4ab^2 + 5a^2b - 7ab^2$	2) $0,3a^2bc - 0,4acb^2 + 5a^2bc - 0,7ab^2c$
3) $12axy - 0,5x^2y - 7,6xay + 1,5xyx$	4) $\frac{1}{3}a^2bc - \frac{3}{4}ab^2c + 5a^2cb - 2acb^2$
5) $1\frac{1}{3}a^2b^3c - 0,4acb^2 + 5a^2b^3c - 0,7ab^2c$	6) $3\frac{2}{5}axy - 0,5x^2y - 2\frac{4}{5}xay + 1,5xyx$

6. Isbotlang:

1) Ikkita ketma-ket natural sonning yig‘indisi toq;
2) Ikkita ketma-ket juft sonning yig‘indisi 4 ga bo‘linmaydi;
3) Ikkita ketma-ket toq sonning yig‘indisi 4 ga bo‘linadi;
4) Uchta ketma-ket natural sonning yig‘indisi uchga bo‘linadi;
5) Uchta ketma-ket juft sonning yig‘indisi 6 ga bo‘linadi;
6) To‘rtta ketma-ket natural sonning yig‘indisi 4 ga bo‘linmaydi;
7) Beshta ketma-ket natural sonning yig‘indisi 5 ga bo‘linadi.

7. Ko‘phadlarni ko‘paytiring:

1) $(a-3)(a-2)$	2) $(a+4)(a-5)$	3) $(0,5a-1,2)(a+3)$
4) $(a-3)(b-2)$	5) $(a+4)(b-5)$	6) $(0,5a-1,2)(b+3)$
7) $(x-2y)(2x+y)$	8) $(3x+2y)(x-3y)$	9) $(0,5x+0,3y)(1,2x-3y)$
10) $(x+2y-3z)(2x-3y+z)$	11) $(2a-4b+5c)(5a-4b+2c)$	12) $(x-2a+7y)(a-5x)$
13) $(a-b)(a+b)(x-y)$	14) $(a+b)(c-d)(x+y)$	15) $(a-2)(a+3)(a-1)$

8. Kasrni qisqartiring:

1) $\frac{12a^2b}{3b^2}$ 2) $\frac{15a^2b}{3a^2}$ 3) $\frac{12a^2b}{3ab^2}$ 4) $\frac{30a^2bc^3}{12ab^2}$ 5) $\frac{30a^2bc^3}{12a^3b}$ 6) $\frac{30a^2bc^3}{12ac^4}$

9. Umumiy ko‘paytuvchini qavsdan tashqariga chiqaring:

1) $24a^3+3a^2-15a$	2) $35a^4-14a^3+21a^2-28a$	3) $ab^2-2a^2b+5a^2b^2$
4) $42x^3y^2z-15x^2yz^2$	5) $48x^4y^2z-32x^3yz^3+24x^2y^3z$	6) $x^3yz^2-xy^2z^3-xyz^4$

10. Ko‘paytuvchilarga ajrating:

1) $a(x-5)-4(x-5)$	2) $a(x+y)+b(x+y)$	3) $a^2(x-y)-3a(x-y)$
4) $x(a-b)+y(b-a)$	5) $3x(2a-3b)-2y(3b-2a)$	6) $2x^2(a-4c)+3x(4c-a)$

11. Ko‘paytuvchilarga ajrating:

1) $x+y+a(x+y)$	2) $a-b+c(a-b)$	3) $2a-3b+x(3b-2a)$
4) $2a-3b+4ac-6bc$	5) $a+3b-2ax-6bx$	6) $x-2y+ax-2ay$
7) $2ax-3by+6bx-ay$	8) $3ax-4by-12ay+bx$	9) $5ay-3bx+ax-15by$
10) $5a^2x-7a+14-10ax$	11) $m^2+3n-mn-3m$	12) $xy^2-by^2-ax+ab+y^2-a$

12. Hisoblang:

1) $\frac{1}{1\cdot2}+\frac{1}{2\cdot3}+\frac{1}{3\cdot4}+\cdots+\frac{1}{99\cdot100}$
2) $\frac{1}{2\cdot4}+\frac{1}{4\cdot6}+\frac{1}{6\cdot8}+\cdots+\frac{1}{48\cdot50}$
3) $\frac{1}{3}+\frac{1}{15}+\frac{1}{35}+\cdots+\frac{1}{99}$
4) $\frac{1}{4}+\frac{1}{28}+\frac{1}{70}+\cdots+\frac{1}{550}$

Yig‘indining kvadrati: $(a+b)^2=a^2+2ab+b^2$

13. Qavslarni oching:

1) $(a+3)^2$	2) $(a+5)^2$	3) $(a+4)^2$
4) $(a+2b)^2$	5) $(2a+3b)^2$	6) $(3a+2b)^2$
7) $(a^2+0,5)^2$	8) $(b^3+0,3)^2$	9) $(c^4+0,4)^2$
10) $\left(\frac{1}{3}a^2+\frac{3}{2}b\right)^2$	11) $\left(\frac{2}{3}a+\frac{3}{2}b^2\right)^2$	12) $\left(\frac{3}{5}a^2+\frac{5}{2}b^2\right)^2$

14. Hisoblang:

1) 11^2 2) 21^2 3) 31^2 4) 43^2 5) 54^2 6) 101^2

15. Uchga bo‘linmaydigan ixtiyoriy natural sonning kvadratini uchga bo‘lganda 1 qoldiq qolishi isbotlansin.

16. Natural sonning kvadratini beshga bo‘lganda 3 qoldiq qolmasligini isbotlang.

17. Natural sonning kvadratini yettiga bo‘lganda 5 qoldiq qolmasligini isbotlang.

Ayirmaning kvadrati: $(a-b)^2 = a^2 - 2ab + b^2$

18. Qavslarni oching:

1) $(a-2)^2$ 2) $(a-4)^2$ 3) $(a-7)^2$
4) $(a-2b)^2$ 5) $(2a-3b)^2$ 6) $(3a-2b)^2$
7) $(a^2-0,5)^2$ 8) $(b^3-0,3)^2$ 9) $(c^4-0,6)^2$
10) $\left(\frac{1}{3}a^2-\frac{3}{2}b\right)^2$ 11) $\left(\frac{2}{3}a-\frac{3}{2}b^2\right)^2$ 12) $\left(\frac{3}{5}a^2-\frac{5}{2}b^2\right)^2$

19. Hisoblang:

1) 19^2 2) 29^2 3) 39^2 4) 48^2 5) 98^2 6) 99^2

20. Ifodani soddalashtiring:

1) $(a+2)^2+(a-2)^2$ 2) $(a+4)^2+(a-4)^2$ 3) $(a+7)^2+(a-7)^2$
4) $(a+2b)^2-(a-2b)^2$ 5) $(2a+3b)^2-(2a-3b)^2$ 6) $(3a+2b)^2-(3a-2b)^2$
7) $(a^2+0,5)^2-(a^2-0,3)^2$ 8) $(b^3+0,3)^2-(b^3-0,2)^2$ 9) $(c^4+0,6)^2-(c^4-0,4)^2$
10) $\left(\frac{1}{3}a^2+\frac{3}{2}b\right)^2-\left(\frac{1}{3}a^2-\frac{3}{2}b\right)^2$ 11) $\left(\frac{2}{3}a-\frac{3}{2}b^2\right)^2-\left(\frac{2}{3}a+\frac{3}{2}b^2\right)^2$ 12) $\left(\frac{3}{5}a^2-\frac{5}{2}b^2\right)^2+\left(\frac{3}{5}a^2+\frac{5}{2}b^2\right)^2$
13) $(y-9)^2-(y-3)(y+7)$ 14) $(2y+3)^2-(y-1)(y+1)$ 15) $(3y-1)(1-3y)+(3y+1)^2$

21. x ni shunday birhad bilan almashtiringki, tenglik to‘g‘ri bo‘lsin:

1) $(x+2a)^2 = 4a^2+12ab+9b^2$ 2) $(b+x)^2 = 25a^2+10ab+b^2$
3) $(a-2b)^2 = a^2-4ab+x$ 4) $(2a-3b)^2 = x-12ab+9b^2$
5) $(b^2+0,5)^2 = b^4+2x+0,25$ 6) $(b^3-0,3)^2 = x-0,6b^3+0,09$

22. Uchhadni ikkihadning kvadrati shaklida ifodalang:

1) $4a^2+12ab+9b^2$ 2) $25a^2+10ab+b^2$
3) $a^4-4a^2b+4b^2$ 4) $a^4-12a^2b+9b^2$
5) $b^6+b^3+0,25$ 6) $b^8-0,6b^4+0,09$

23. Tenglamani yeching:

1) $(x+4)^2-(x-2)(x+3)=7$ 2) $(2x-1)^2+(x-2)(3-4x)=-7$
3) $(2y-3)^2-(2y+3)^2=10$ 4) $(5y+1)^2-(1-5y)^2=-2$
5) $5(z-2)^2+(5z-1)(2-z)=5$ 6) $2(z+3)^2-(2z+7)(z-1)=-9$

Kvadratlar ayirmasi: $a^2-b^2=(a-b)(a+b)$

24. Ko‘paytuvchilarga ajrating:

1) a^2-1 2) a^2-4 3) a^2-9
4) $4b^2-1$ 5) $9b^4-4$ 6) $16b^6-25$
7) $4a^2-9b^2$ 8) $9x^2-16b^4$ 9) $0,25x^6-0,04a^2$

25. Qavslarni oching:

1) $(a-2b)(a+2b)$ 2) $(2a-3b)(2a+3b)$
3) $(3a-4b)(3a+4b)$ 4) $\left(\frac{1}{2}a-\frac{1}{3}b\right)\left(\frac{1}{2}a+\frac{1}{3}b\right)$
5) $\left(\frac{1}{3}a^2-\frac{1}{5}b\right)\left(\frac{1}{3}a^2+\frac{1}{5}b\right)$ 6) $\left(\frac{2}{3}a^3-\frac{3}{2}b^3\right)\left(\frac{2}{3}a^3+\frac{3}{2}b^3\right)$
7) $(x-y)(x+y)(x^2+y^2)$ 8) $(x^2-2y)(x^2+2y)(x^4+4y^4)$
9) $(2x-3y^2)(2x+3y^2)(4x^2+9y^4)$ 10) $\left(\frac{x}{2}-\frac{2y}{3}\right)\left(\frac{x}{2}+\frac{2y}{3}\right)\left(\frac{x^2}{4}+\frac{4y^2}{9}\right)$

26. Hisoblang:

1) $\left(1-\frac{1}{2}\right)\left(1+\frac{1}{4}\right)\left(1+\frac{1}{16}\right)\left(1+\frac{1}{256}\right)$
2) $\left(1-\frac{1}{3}\right)\left(1+\frac{1}{9}\right)\left(1+\frac{1}{81}\right)\left(1+\frac{1}{6561}\right)$

27. Qulay usulda hisoblang:

1) $23\cdot 17$ 2) $31\cdot 29$ 3) $52\cdot 48$ 4) $75\cdot 85$ 5) $85\cdot 95$ 6) $101\cdot 99$

28. Ko‘paytuvchilarga ajrating:

1) $(a^2+2ab+b^2)-4a^2$ 2) $(a^2-4ab+4b^2)-16b^2$ 3) $(9a^2+6ab+b^2)-4b^2$
4) $(x^2+1)^2-x^2$ 5) $(x^2-1)^2-4x^2$ 6) $(x^3+4)^2-x^6$
7) a^2-b^2-a-b 8) a^2-4b^2-a+2b 9) $9a^2-4b^2+3a+2b$

29. Kasrlarni qisqartiring:

1) $\frac{57^2-17^2}{44^2-30^2}$ 2) $\frac{55^2-27^2}{54^2-28^2}$ 3) $\frac{101^2-99^2}{51^2-49^2}$
4) $\frac{17^2+34\cdot 13+13^2}{90^2-60^2}$ 5) $\frac{25^2+50\cdot 15+15^2}{82^2-42^2}$ 6) $\frac{57^2-34\cdot 57+17^2}{76^2-4^2}$

30. Kvadratning ikki qarama-qarshi tomonlari 4 cm dan uzaytirildi, qolgan tomonlari esa shunchaga qisqartirildi. Kvadratning yuzi o‘zgaradimi?

31. Ixtiyoriy n natural son uchun $(7n-2)^2-(2n-7)^2$ ayirma 5 va 9 ga bo‘linishini isbotlang.

32. Ixtiyoriy a, b, n natural sonlar uchun $(an-b)^2-(bn-a)^2$ ayirma a^2-b^2 ga bo‘linishini isbotlang.

Yig‘indining kubi: $(a+b)^3 = a^3+3a^2b+3ab^2+b^3$

33. Qavslarni oching:

1) $(a+3)^3$	2) $(a+5)^3$	3) $(a+4)^3$
4) $(a+2b)^3$	5) $(2a+3b)^3$	6) $(3a+2b)^3$
7) $(a^2+0,5)^3$	8) $(b^3+0,3)^3$	9) $(c^4+0,4)^3$
10) $\left(\frac{1}{3}a^2+\frac{3}{2}b\right)^3$	11) $\left(\frac{2}{3}a+\frac{3}{2}b^2\right)^3$	12) $\left(\frac{3}{5}a^2+\frac{5}{2}b^2\right)^3$

34. To‘rthadni ikkihadning kubi shaklida yozing:

1) $a^3+6a^2b+12ab^2+8b^3$	2) $8a^3+12a^2b+6ab^2+b^3$
3) $8a^6+36a^4b+54a^2b^2+27b^3$	4) $125a^6+75a^4b^2+15a^2b^4+b^6$
5) $b^6+9b^4+27b^2+27$	6) $64b^3+24b+3b+0,125$

35. Isbotlang:

1) Ixtiyoriy natural sonni va uning kubini 3 ga bo‘lganda bir xil qoldiq qoladi
2) Sonni 5 ga bo‘lganda 3 qoldiq qolsa, shu sonning kubini 5 ga bo‘lganda 2 qoldiq qoladi;
3) Sonni 5 ga bo‘lganda 2 qoldiq qolsa, shu sonning kubini 5 ga bo‘lganda 3 qoldiq qoladi.

Ayirmaning kubi: $(a-b)^3 = a^3-3a^2b+3ab^2-b^3$

36. Qavslarni oching:

1) $(a-2)^3$	2) $(a-4)^3$	3) $(a-3)^3$
4) $(a-2b)^3$	5) $(2a-3b)^3$	6) $(3a-2b)^3$
7) $(a^2-0,1)^3$	8) $(b^4-0,2)^3$	9) $(c^3-0,3)^3$
10) $\left(\frac{1}{3}a^2-\frac{3}{2}b^3\right)^3$	11) $\left(\frac{2}{3}a^3-\frac{3}{2}b^2\right)^3$	12) $\left(\frac{3}{5}a^2-\frac{5}{2}b^2\right)^3$

37. To‘rthadni ikkihadning kubi shaklida yozing:

1) $a^3-6a^2b+12ab^2-8b^3$	2) $8a^3-12a^2b+6ab^2-b^3$
3) $-a^6+3a^4b-3a^2b^2+b^3$	4) $-125a^6+75a^4b^2-15a^2b^4+b^6$
5) $b^6-3b^4+3b^2-1$	6) $8b^3-6b+1,5b-0,125$

Kublar yig‘indisi: $a^3+b^3=(a+b)(a^2-ab+b^2)$

38. Ko‘paytuvchilarga ajrating:

1) a^3+1 2) a^3+8 3) a^3+27
4) $8b^3+1$ 5) $27b^3+8$ 6) $8b^6+125$
7) $8a^6+27b^3$ 8) $27x^3+125b^6$ 9) $0,125x^6+0,008a^3$

39. Qavslarni oching:

1) $(a+2b)(a^2-2ab+4b^2)$ 2) $(2a+3b)(4a^2-6ab+9b^2)$
3) $(3a+4b)(9a^2-12ab+16b^2)$ 4) $\left(\frac{1}{2}a+\frac{1}{3}b\right)\left(\frac{1}{4}a^2-\frac{1}{6}ab+\frac{1}{9}b^2\right)$
5) $\left(\frac{1}{3}a^2+\frac{1}{5}b\right)\left(\frac{1}{9}a^4-\frac{1}{15}ab+\frac{1}{25}b^2\right)$ 6) $\left(\frac{2}{3}a^3+\frac{3}{2}b^3\right)\left(\frac{4}{9}a^6-a^3b^3+\frac{9}{4}b^6\right)$

40. Hisoblang:

1) $\frac{251^3+51^3}{251^2-51\cdot251+51^2}$ 2) $\frac{107^3+77^3}{77^2-107\cdot77+107^2}$ 3) $\frac{168^2-34\cdot168+34^2}{168^3+34^3}$ 4) $\frac{128^2-72\cdot128+72^2}{128^3+72^3}$

41. Ko‘paytuvchilarga ajrating:

1) a^5+a^2 2) ab^7+8a^4b 3) $54c^4d+2cd^4$ 4) $250cd^3+2c^7d^6$

Kublar ayirmasi: $a^3-b^3=(a-b)(a^2+ab+b^2)$

42. Ko‘paytuvchilarga ajrating:

1) a^3-1 2) a^3-27 3) a^3-125
4) $8b^3-1$ 5) $27b^3-8$ 6) $8b^6-125$
7) $27a^6-8b^3$ 8) $27x^3-125b^6$ 9) $0,125x^6-0,008a^3$

43. Qavslarni oching:

1) $(a-2b)(a^2+2ab+4b^2)$ 2) $(2a-3b)(4a^2+6ab+9b^2)$
3) $(3a-4b)(9a^2+12ab+16b^2)$ 4) $\left(\frac{1}{2}a-\frac{1}{3}b\right)\left(\frac{1}{4}a^2+\frac{1}{6}ab+\frac{1}{9}b^2\right)$
5) $\left(\frac{2}{3}a^2-\frac{3}{5}b\right)\left(\frac{4}{9}a^4+\frac{2}{5}ab+\frac{9}{25}b^2\right)$ 6) $\left(\frac{3}{2}a^3-\frac{2}{3}b^3\right)\left(\frac{9}{4}a^6+a^3b^3+\frac{4}{9}b^6\right)$

44. Ko‘paytuvchilarga ajrating:

1) $(8a^3-27b^3)-2a(4a^2-9b^2)$ 2) $(64a^3+125b^3)-5b(25b^2-16a^2)$
3) $a^3+b^3+(a+b)^2+a+b$ 4) $a^3-b^3+(a-b)^2+a-b$
5) $(a-b)^3+(b-c)^3+(c-a)^3$ 6) $(2x-y)^3-(3z-y)^3-(2x-3z)^3$

45. Hisoblang:

1) $\frac{251^3-151^3}{251^2+151\cdot251+151^2}$ 2) $\frac{147^3-87^3}{87^2+147\cdot87+147^2}$ 3) $\frac{168^2+151\cdot168+151^2}{168^3-151^3}$ 4) $\frac{198^2+197\cdot198+197^2}{198^3-197^3}$

46. Tenglamani yeching:

1) $(x+2)(x^2-2x+4)-x(x-3)(x+3)=26$
2) $(x-3)(x^2+3x+9)-x(x+4)(x-4)=21$
3) $(2x-1)(4x^2+2x+1)-4x(2x^2-3)=23$
4) $(4x+1)(16x^2-4x+1)-16x(4x^2-5)=17$
5) $(x-1)^3+(2-x)^3=1$
6) $(x-2)^3-8(x-1)^3+x^3=0$

47. Ko‘paytuvchilarga ajrating:

1) ab^4-a^4b 2) $a^2b^5-a^5b^2$ 3) $5a^3b-625b^4$ 4) $4ab^7-32a^4b^4$

Algebraik kasrlar

48. Kasrlarni qisqartiring:

1) $\frac{15(a+b)}{25(a+b)^2}$ 2) $\frac{24(a-2b)}{36(2b-a)^3}$ 3) $\frac{6(a^2-b^2)}{8(a+b)^2}$ 4) $\frac{12a^2bc^2}{26b^2c^3}$ 5) $\frac{121a^4bc^3}{55abc^2}$
6) $\frac{ac-ab}{ab+ac}$ 7) $\frac{a^2c-b^2c}{ac^2+bc^2}$ 8) $\frac{a^3c+b^3c}{a^2c-abc+b^2c}$ 9) $\frac{8a^3-c^3}{c^2-4a^2}$ 10) $\frac{3a^3+ab^2-6a^2b-2b^3}{9a^5-ab^4-18a^4b+2b^5}$

49. Algebraik kasrlarni qo‘shing va ayiring:

1) $\frac{2}{a}+\frac{2}{a^2}$ 2) $\frac{a}{b}-\frac{a^2}{b^2}$ 3) $1-\frac{2}{a}+\frac{1}{a^2}$ 4) $4+\frac{4}{b}+\frac{1}{b^2}$
5) $\frac{3}{mn}-\frac{2}{mn^2}$ 6) $\frac{5}{m^2n}+\frac{3}{mn^2}$ 7) $\frac{1}{a+1}+\frac{1}{(a+1)^2}$ 8) $1-\frac{2}{b+2}+\frac{1}{(b+2)^2}$
9) $\frac{1}{m-n}+\frac{2}{m+n}$ 10) $\frac{5}{m-2n}-\frac{3}{m+2n}$ 11) $\frac{1}{a+b}+\frac{1}{a-b}+\frac{1}{a^2-b^2}$ 12) $1-\frac{2}{b+2}+\frac{1}{b^2-4}$
13) $\frac{1}{x^3+y^3}+\frac{2}{x^2-xy+y^2}$ 14) $\frac{x}{x^3-y^3}-\frac{1}{x^2+xy+y^2}$ 15) $\frac{x+y}{x^2+xy+y^2}+\frac{y^2}{x^3-y^3}$ 16) $\frac{x-y}{x^2-xy+y^2}-\frac{x^2}{x^3+y^3}$

50. Amallarni bajaring:

1) $\left(1-\frac{a-b}{a+b}\right)\left(2+\frac{2b}{a-b}\right)$ 2) $\left(1+\frac{a+b}{a-b}\right)\left(2-\frac{2a}{a+b}\right)$
3) $\left(\frac{a+b}{a-b}-\frac{a-b}{a+b}\right):\frac{2b}{a^2-b^2}$ 4) $\left(\frac{a-2b}{a+2b}-\frac{a+2b}{a-2b}\right):\frac{4ab}{a^2-4b^2}$
5) $\left(\frac{x+6}{3x+9}-\frac{1}{x+3}\right):\frac{x+2}{3x}$ 6) $\frac{y-2}{y-5}:\left(\frac{y^2+24}{y^2-25}-\frac{4}{y-5}\right)$
7) $\frac{m^2+mn}{m^2+n^2}\left(\frac{m}{m-n}-\frac{n}{m+n}\right)$ 8) $\frac{mn-n^2}{m^2+n^2}\left(\frac{m}{m+n}+\frac{n}{m-n}\right)$
9) $\frac{a^2-b^2}{a+c}\cdot\frac{a^2-c^2}{ab+b^2}\left(a+\frac{ab}{a-b}\right)$ 10) $\frac{ax^2-4ay^2}{x^2+4xy+4y^2}:\frac{ax^2-4axy+4ay^2}{3x+6y}$
11) $\frac{xy-4x-2y+8}{2x+8-xy-4y}:\frac{xy+4x-2y-8}{2x-8-xy+4y}$ 12) $\left(\frac{2a+3b}{2a-3b}-\frac{2a-3b}{2a+3b}\right):\left(\frac{2a-3b}{2a+3b}+\frac{2a+3b}{2a-3b}\right)$