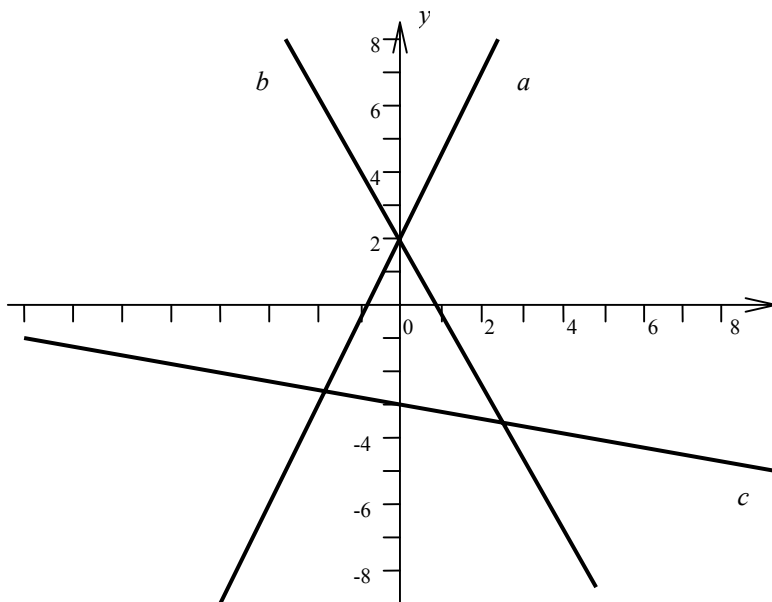


№ 398.

$$\begin{aligned} & \left(\frac{x+5}{x^2-5x} - \frac{x}{x^2-25} \right) \cdot \frac{x^2-25}{5} = \\ & = \left(\frac{x+5}{x(x-5)} - \frac{x}{(x-5)(x+5)} \right) \cdot \frac{(x-5)(x+5)}{5} = \\ & = \frac{x^2+10x+25-x^2}{x(x-5)(x+5)} \cdot \frac{(x-5)(x+5)}{5} = \frac{5(2x+5)}{5x} = \frac{2x+5}{x}. \end{aligned}$$

№ 399.

На рисунке буквами a , b и c обозначены графики функций:



a – график функции $y = 2x + 2$;

b – график функции $y = -2x + 2$;

c – график в функции $y = -\frac{x}{4} - 3$.

№ 400.

Из условия задачи имеем:

$$V = \pi R^2 H; R^2 = \frac{V}{\pi H}; R = \sqrt{\frac{V}{\pi H}}.$$

§ 7. Применение свойств арифметического квадратного корня

17. Вынесение множителя из-под знака корня. Внесение множителя под знак корня

№ 401.

- а) $\sqrt{12} = \sqrt{4 \cdot 3} = \sqrt{4} \cdot \sqrt{3} = 2\sqrt{3}$;
- б) $\sqrt{18} = \sqrt{9 \cdot 2} = \sqrt{9} \cdot \sqrt{2} = 3\sqrt{2}$;
- в) $\sqrt{80} = \sqrt{16 \cdot 5} = \sqrt{16} \cdot \sqrt{5} = 4\sqrt{5}$;
- г) $\sqrt{48} = \sqrt{16 \cdot 3} = \sqrt{16} \cdot \sqrt{3} = 4\sqrt{3}$;
- д) $\sqrt{125} = \sqrt{25 \cdot 5} = \sqrt{25} \cdot \sqrt{5} = 5\sqrt{5}$;
- е) $\sqrt{108} = \sqrt{27 \cdot 4} = \sqrt{27} \cdot \sqrt{4} = 3\sqrt{3} \cdot 2 = 6\sqrt{3}$;
- ж) $\sqrt{363} = \sqrt{3 \cdot 121} = \sqrt{121} \cdot \sqrt{3} = 11\sqrt{3}$;
- з) $\sqrt{845} = \sqrt{5 \cdot 169} = \sqrt{169} \cdot \sqrt{5} = 13\sqrt{5}$.

№ 402.

- а) $\frac{1}{2}\sqrt{24} = \frac{1}{2}\sqrt{4 \cdot 6} = \frac{1}{2}\sqrt{4} \cdot \sqrt{6} = \frac{1}{2} \cdot 2\sqrt{6} = \sqrt{6}$;
- б) $\frac{2}{3}\sqrt{45} = \frac{2}{3}\sqrt{9 \cdot 5} = \frac{2}{3} \cdot 3\sqrt{5} = 2\sqrt{5}$;
- в) $-\frac{1}{7}\sqrt{147} = -\frac{1}{7}\sqrt{49 \cdot 3} = -\frac{1}{7} \cdot 7\sqrt{3} = -\sqrt{3}$;
- г) $-\frac{1}{5}\sqrt{275} = -\frac{1}{5}\sqrt{25 \cdot 11} = -\frac{1}{5}\sqrt{25} \cdot \sqrt{11} = -\frac{1}{5} \cdot 5\sqrt{11} = -\sqrt{11}$;
- д) $0,1\sqrt{20000} = 0,1\sqrt{10000 \cdot 2} = 0,1 \cdot 100\sqrt{2} = 10\sqrt{2}$;
- е) $-0,05\sqrt{28800} = -0,05\sqrt{2^5 \cdot 3^2 \cdot 10^2} = -0,05 \cdot 2^2 \cdot 3 \cdot 10\sqrt{2} =$
 $= -0,05 \cdot 120\sqrt{2} = -6\sqrt{2}$.

№ 403.

$$\begin{aligned}
\text{a)} \quad & \sqrt{20} = \sqrt{4 \cdot 5} = 2\sqrt{5} ; \\
\text{б)} \quad & \sqrt{98} = \sqrt{49 \cdot 2} = \sqrt{49} \cdot \sqrt{2} = 7\sqrt{2} ; \\
\text{в)} \quad & \sqrt{200} = \sqrt{100 \cdot 2} = 10\sqrt{2} ; \\
\text{г)} \quad & \sqrt{160} = \sqrt{16 \cdot 10} = \sqrt{16} \cdot \sqrt{10} = 4\sqrt{10} ; \\
\text{д)} \quad & 0,2\sqrt{75} = 0,2\sqrt{3 \cdot 25} = 0,2\sqrt{3} \cdot \sqrt{25} = 0,2 \cdot 5\sqrt{3} = \sqrt{3} ; \\
\text{е)} \quad & 0,7\sqrt{300} = 0,7\sqrt{3 \cdot 100} = 0,7 \cdot 10\sqrt{3} = 7\sqrt{3} ; \\
\text{ж)} \quad & -0,125\sqrt{192} = -0,125\sqrt{16 \cdot 3 \cdot 2 \cdot 2} = -0,125\sqrt{16 \cdot 2^2 \cdot 3} = \\
& = -0,125 \cdot 4 \cdot 2\sqrt{3} = -\sqrt{3} ; \\
\text{з)} \quad & -\frac{1}{3}\sqrt{450} = -\frac{1}{3}\sqrt{9 \cdot 5 \cdot 10} = -\frac{1}{3} \cdot 3 \cdot 5\sqrt{2} = -5\sqrt{2} ; \\
\text{и)} \quad & -10\sqrt{0,02} = -1 \cdot 10\sqrt{0,02} = -\sqrt{100} \cdot \sqrt{0,02} = -\sqrt{2} ; \\
\text{к)} \quad & 5\sqrt{\frac{a}{5}} = \sqrt{125} \cdot \sqrt{\frac{a}{5}} = \sqrt{\frac{25a}{5}} = \sqrt{5a} ; \\
\text{л)} \quad & -\frac{1}{2}\sqrt{12x} = -1 \cdot \frac{1}{2}\sqrt{12x} = -\sqrt{\frac{1}{4} \cdot 12x} = -\sqrt{3x} .
\end{aligned}$$

№ 404.

$$\begin{aligned}
\text{a)} \quad & 7\sqrt{10} = \sqrt{49} \cdot \sqrt{10} = \sqrt{490} ; \\
\text{б)} \quad & 5\sqrt{3} = \sqrt{25} \cdot \sqrt{3} = \sqrt{75} ; \\
\text{в)} \quad & 6\sqrt{x} = \sqrt{36} \cdot \sqrt{x} = \sqrt{36x} ; \\
\text{г)} \quad & 10\sqrt{y} = \sqrt{100} \cdot \sqrt{y} = \sqrt{100y} ; \\
\text{д)} \quad & 3\sqrt{2a} = \sqrt{9} \cdot \sqrt{2a} = \sqrt{18a} ; \\
\text{е)} \quad & 5\sqrt{3b} = \sqrt{25} \cdot \sqrt{3b} = \sqrt{75b} .
\end{aligned}$$

№ 405.

$$\begin{aligned}
\text{a)} \quad & -2\sqrt{3} = -\sqrt{4} \cdot \sqrt{3} = -\sqrt{12} ; \\
\text{б)} \quad & -3\sqrt{5} = -\sqrt{9} \cdot \sqrt{5} = -\sqrt{45} ; \\
\text{в)} \quad & -7\sqrt{a} = -\sqrt{49} \cdot \sqrt{a} = -\sqrt{49a} ; \\
\text{г)} \quad & -0,2\sqrt{b} = -\sqrt{0,04} \cdot \sqrt{b} = -\sqrt{0,04b} .
\end{aligned}$$

№ 406.

$$\text{a) } 3\sqrt{\frac{1}{3}} = \sqrt{9} \cdot \sqrt{\frac{1}{3}} = \sqrt{\frac{9}{3}} = \sqrt{3};$$

$$\text{б) } 2\sqrt{\frac{3}{4}} = \sqrt{4} \cdot \sqrt{\frac{3}{4}} = \sqrt{\frac{3 \cdot 4}{4}} = \sqrt{3};$$

$$\text{в) } \frac{1}{3}\sqrt{18} = \sqrt{\frac{1}{9}} \cdot \sqrt{18} = \sqrt{2};$$

$$\text{г) } -10\sqrt{0,02} = -\sqrt{100} \cdot \sqrt{0,02} = -\sqrt{2};$$

$$\text{д) } 5\sqrt{\frac{9}{5}} = \sqrt{25} \cdot \sqrt{\frac{9}{5}} = \sqrt{45};$$

$$\text{е) } -\frac{1}{2}\sqrt{12x} = -\sqrt{\frac{1}{4}} \cdot \sqrt{12x} = -\sqrt{3x}.$$

№ 407.

$$\text{a) } 2\sqrt{2} = \sqrt{4} \cdot \sqrt{2} = \sqrt{8};$$

$$\text{б) } 5\sqrt{y} = \sqrt{25} \cdot \sqrt{y} = \sqrt{25y};$$

$$\text{в) } -7\sqrt{3} = -\sqrt{49} \cdot \sqrt{3} = -\sqrt{147};$$

$$\text{г) } -6\sqrt{2a} = -\sqrt{36} \cdot \sqrt{2a} = -\sqrt{72a};$$

$$\text{д) } \frac{1}{3}\sqrt{18b} = \sqrt{\frac{1}{9}} \cdot \sqrt{18b} = \sqrt{\frac{1 \cdot 18}{9 \cdot 1}}b = \sqrt{2b};$$

$$\text{е) } -0,1\sqrt{200c} = -\sqrt{0,1 \cdot 200c} = -\sqrt{2c}.$$

№ 410.

$$\text{a) } 3\sqrt{3} = \sqrt{27}; 2\sqrt{6} = \sqrt{24};$$

$$4\sqrt{2} = \sqrt{32}; \sqrt{24} < \sqrt{27} < \sqrt{32}, \text{ значит,}$$

$$2\sqrt{6} < 3\sqrt{3} < 4\sqrt{2};$$

$$\text{б) } 6\sqrt{2} = \sqrt{36} \cdot \sqrt{2} = \sqrt{72}; 3\sqrt{7} = \sqrt{63};$$

$$2\sqrt{14} = \sqrt{56}; \sqrt{56} < \sqrt{58} < \sqrt{63} < \sqrt{72} \Rightarrow$$

$$2\sqrt{14} < 58 < 3\sqrt{7} < 6\sqrt{2}.$$

№ 411.

$$\text{a) } \sqrt{4} \cdot \sqrt{7} \vee \sqrt{49} \cdot \sqrt{2} ; \sqrt{28} \prec \sqrt{98} ; 2\sqrt{7} \prec 7\sqrt{2} ;$$

$$\text{б) } \sqrt{9} \cdot \sqrt{120} \vee \sqrt{4} \cdot \sqrt{270} ; \sqrt{1080} = \sqrt{1080} ;$$

$$3\sqrt{120} \prec 2\sqrt{270} ;$$

$$\text{в) } \sqrt{\frac{1}{4}} \cdot \sqrt{6} \vee \sqrt{36} \cdot \sqrt{\frac{1}{2}} ; \sqrt{\frac{6}{4}} \vee \sqrt{\frac{36}{2}}$$

$$\sqrt{1,5} \prec \sqrt{18} ; \frac{1}{2}\sqrt{6} \prec 6\sqrt{\frac{1}{2}} .$$

№ 412.

$$\text{a) } \sqrt{7x^2} = \sqrt{7}|x| = \sqrt{7}x, \text{ при } x \geq 0 ;$$

$$\text{б) } \sqrt{10y^2} = \sqrt{10}|y| = \sqrt{10}y, \text{ при } y < 0 ;$$

$$\text{в) } \sqrt{x^3} = |x| \cdot \sqrt{x} = x\sqrt{x} ;$$

$$\text{г) } \sqrt{a^5} = \sqrt{a^4 \cdot a} = \sqrt{a}|a^2| = a^2\sqrt{a} ;$$

$$\text{д) } \sqrt{16y^7} = \sqrt{16y \cdot y^6} = |4|\sqrt{y}|y^3| = 4y^3\sqrt{y} ;$$

$$\text{е) } \sqrt{\frac{3x^3}{16}} = \sqrt{x} \cdot \sqrt{3} \cdot \left| \frac{1}{4}x \right| = \frac{\sqrt{3x}}{4}x = \frac{x\sqrt{3x}}{4} .$$

№ 413.

$$\text{a) } \sqrt{8a^3} = \sqrt{2^2 \cdot 2a^2 \cdot a} = 2a\sqrt{2a} ;$$

$$\text{б) } \sqrt{300b^5} = \sqrt{3 \cdot 100b^4 \cdot b} = 10b^2\sqrt{3b} ;$$

$$\text{в) } \sqrt{48x^2} = \sqrt{16 \cdot 3x^2} = 4|x|\sqrt{3} = -4x\sqrt{3}, \text{ при } x \leq 0 ;$$

$$\text{г) } \sqrt{72a^4} = \sqrt{2 \cdot 36a^4} = 6a^2\sqrt{2} ;$$

$$\text{д) } \sqrt{50a^7} = \sqrt{2 \cdot 25a^6 \cdot a} = 5a^3\sqrt{2a} ;$$

$$\text{е) } \sqrt{27c^6} = \sqrt{3^2 \cdot 3c^6} = 3|c^3|\sqrt{3} = -3c^3\sqrt{3}, \text{ при } c < 0 .$$

№ 414.

$$\text{a) } \sqrt{6x^2} = \sqrt{6} \cdot |x| = x\sqrt{6}, \text{ при } x \geq 0 ;$$

$$\text{б) } \sqrt{3y^2} = \sqrt{3} \cdot |y| = -\sqrt{3}y, \text{ при } y < 0 ;$$

$$\text{в)} \sqrt{9a^3} = 3\sqrt{a} \cdot a = 3a\sqrt{a} ;$$

$$\text{г)} \sqrt{50b^4} = \sqrt{2 \cdot 25b^4} = \sqrt{2} \cdot 5b^2 = 5b^2\sqrt{2} .$$

УПРАЖНЕНИЯ ДЛЯ ПОВТОРЕНИЯ

№ 415.

$$\begin{aligned} & \left(\frac{2x+1}{x^2-3x} - \frac{2x-1}{x^2+3x} \right) \cdot \frac{x^2-9}{7x} + 1 = \left(\frac{2x+1}{x(x-3)} - \frac{2x-1}{x(x+3)} \right) \cdot \frac{x^2-9}{7x} + 1 = \\ & = \frac{(2x+1)(x+3) - (x-3)(2x-1)}{x(x-3)(x+3)} \cdot \frac{x^2-9}{7x} + 1 = \\ & = \frac{2x^2+6x+x+3-2x^2+x+6x-3}{x(x-3)(x+3)} \cdot \frac{x^2-9}{7x} + 1 = \\ & = \frac{14x}{x(x-3)(x+3)} \cdot \frac{(x+3)(x-3)}{7x} + 1 = \frac{14x}{x \cdot 7x} + 1 = \frac{2}{x} + 1 = \frac{2+x}{x} . \end{aligned}$$

№ 416.

Обозначим за x – количество книг, переплетенных в первый день;
тогда $(x + 12)$ – количество книг, переплетенных во второй день;
также $(x + x + 12)$ – количество книг, переплетенных за первые два
дня; $\frac{5}{7}(x + x + 12)$ – количество книг, переплетенных в третий день.

Всего за три дня было переплетено 144 книги. Получаем уравнение:

$$x + (x + 12) + \frac{5}{7}(x + x + 12) = 144 ;$$

$$2x + 12 + \frac{5}{7}(2x + 12) = 144 ;$$

$$(2x + 12) \left(1 + \frac{5}{7} \right) = 144 ;$$

$$\frac{12}{7}(2x + 12) = 144 ;$$

$$\frac{x+6}{7} = 6 ; x + 6 = 42 ; x = 36 ;$$

$$x + 12 = 48 ; \frac{5}{7}(x + x + 12) = 60 .$$

Ответ: в первый день переплели 36 книг, во второй – 48 книг, в третий – 60 книг.

№ 417.

$$а) \frac{4x-1}{12} + \frac{7}{4} = \frac{5-x}{9}; \quad 36 \cdot \left(\frac{4x-1}{12} + \frac{7}{4} \right) = \frac{5-x}{9} \cdot 36;$$

$$3(4x-1) + 9 \cdot 7 = 4(5-x); \quad 12x - 3 + 63 = 20 - 4x;$$

$$16x = -40; \quad x = -2,5;$$

$$б) \frac{2x-9}{6} - \frac{2(5x+3)}{15} = \frac{1}{2}; \quad \frac{30(2x-9)}{6} - \frac{30 \cdot 2(5x+3)}{15} = \frac{1}{2} \cdot 30;$$

$$5(2x-9) - 4(5x+3) = 15;$$

$$-10x - 57 = 15;$$

$$10x = -72;$$

$$x = -7,2.$$

**18. Преобразование выражений, содержащих
квадратные корни**

№ 418.

$$а) 2\sqrt{x} + 3\sqrt{x} - \sqrt{y} = 5\sqrt{x} - \sqrt{y};$$

$$б) -4\sqrt{a} + 2\sqrt{b} + 3\sqrt{a} = 2\sqrt{b} - \sqrt{a};$$

$$в) \sqrt{9a} + \sqrt{25a} - \sqrt{36a} = 3\sqrt{a} + 5\sqrt{a} - 6\sqrt{a} = 2\sqrt{a};$$

$$г) \sqrt{16n} + \sqrt{25n} - \sqrt{9n} = 4\sqrt{n} + 5\sqrt{n} - 3\sqrt{n} = 6\sqrt{n};$$

$$д) \sqrt{5a} - 2\sqrt{20a} - 3\sqrt{80a} = \sqrt{5a} - 2\sqrt{4 \cdot 5a} - 3\sqrt{16 \cdot 5a} = \\ = \sqrt{5a} - 4\sqrt{5a} - 12\sqrt{5} = -15\sqrt{5a};$$

$$е) \sqrt{75} + \sqrt{48} - \sqrt{300} = \sqrt{3 \cdot 25} + \sqrt{16 \cdot 3} - \sqrt{3 \cdot 100} = \\ = 5\sqrt{3} + 4\sqrt{3} - 10\sqrt{3} = -\sqrt{3};$$

$$ж) 3\sqrt{8} - \sqrt{50} + 2\sqrt{18} = 3\sqrt{2 \cdot 4} - \sqrt{2 \cdot 25} + 2\sqrt{2 \cdot 9} = \\ = 6\sqrt{2} - 5\sqrt{2} + 6\sqrt{2} = 7\sqrt{2};$$

$$з) \sqrt{242} - \sqrt{200} + \sqrt{8} = \sqrt{2 \cdot 121} - \sqrt{2 \cdot 100} + \sqrt{2 \cdot 4} = \\ = 11\sqrt{2} - 10\sqrt{2} + 2\sqrt{2} = 3\sqrt{2};$$

$$и) \sqrt{75} - 0,1\sqrt{300} - \sqrt{27} = \sqrt{3 \cdot 25} - 0,1\sqrt{3 \cdot 100} - \sqrt{3 \cdot 9} = \\ = 5\sqrt{3} - \sqrt{3} - 3\sqrt{3} = \sqrt{3};$$

$$\begin{aligned} \kappa) \sqrt{98} - \sqrt{72} + 0,5\sqrt{8} &= \sqrt{2 \cdot 49} - \sqrt{2 \cdot 36} + 0,5\sqrt{4 \cdot 2} = \\ &= 7\sqrt{2} - 6\sqrt{2} + \sqrt{2} = 2\sqrt{2}. \end{aligned}$$

№419

$$\text{a)} \sqrt{8p} - \sqrt{25} + \sqrt{18p} = 2\sqrt{2p} - 5 + 3\sqrt{2p} = 5\sqrt{2p} - 5;$$

б)

$$\begin{aligned} \sqrt{16c} + 2\sqrt{40c} - 3\sqrt{90c} &= 4\sqrt{c} + 2 \cdot 2\sqrt{10c} - 3 \cdot 3\sqrt{10c} = 4\sqrt{c} + 4\sqrt{10c} - 9\sqrt{10c} = \\ &= 4\sqrt{c} - 5\sqrt{10c}; \end{aligned}$$

$$\begin{aligned} \text{в)} 5\sqrt{27} - 4\sqrt{48m} - 2\sqrt{12m} &= 5\sqrt{3 \cdot 9} - 4\sqrt{3 \cdot 16m} - 2\sqrt{4 \cdot 3m} = \\ &= 15\sqrt{3} - 16\sqrt{3m} - 4\sqrt{3m} = 15\sqrt{3} - 20\sqrt{3m}; \end{aligned}$$

$$\begin{aligned} \text{г)} \sqrt{54} - \sqrt{24} + \sqrt{150} &= \sqrt{6 \cdot 9} - \sqrt{6 \cdot 4} + \sqrt{25 \cdot 6} = \\ &= 3\sqrt{6} - 2\sqrt{6} + 5\sqrt{6} = 6\sqrt{6}; \end{aligned}$$

$$\text{д)} 3\sqrt{2} + \sqrt{32} - \sqrt{200} = 3\sqrt{2} + 4\sqrt{2} - 10\sqrt{2} = -3\sqrt{2};$$

$$\begin{aligned} \text{е)} 2\sqrt{72} - \sqrt{50} - 2\sqrt{8} &= 2\sqrt{2 \cdot 36} - \sqrt{2 \cdot 4} = \\ &= 2 \cdot 6\sqrt{2} - 5\sqrt{2} - 2 \cdot 2\sqrt{2} = 12\sqrt{2} - 5\sqrt{2} - 4\sqrt{2}. \end{aligned}$$

№420

$$\text{a)} (\sqrt{12} + \sqrt{15}) \cdot \sqrt{3} = \sqrt{12} \cdot \sqrt{3} + \sqrt{15} \cdot \sqrt{3} = \sqrt{4 \cdot 3 \cdot 3} + \sqrt{3 \cdot 5 \cdot 3} = 6 + 3\sqrt{5};$$

$$\begin{aligned} \text{б)} \sqrt{5}(3\sqrt{5} + 5\sqrt{8}) &= \sqrt{5} \cdot 3\sqrt{5} + 5\sqrt{5} \cdot \sqrt{8} = 3 \cdot 5 + 5\sqrt{4 \cdot 10} = 15 + 5 \cdot 2\sqrt{10} = \\ &= 15 + 10\sqrt{10} \end{aligned}$$

$$\text{в)} (4\sqrt{3} - 2\sqrt{6}) \cdot 2\sqrt{3} = 4\sqrt{3} \cdot 2\sqrt{3} - 2\sqrt{6} \cdot 2\sqrt{3} = 24 - 4 \cdot 3\sqrt{2} = 24 - 12\sqrt{2};$$

г)

$$\begin{aligned} (3\sqrt{5} - 2\sqrt{3}) \cdot \sqrt{5} + \sqrt{60} &= 3\sqrt{5} \cdot \sqrt{5} - 2\sqrt{3} \cdot \sqrt{5} + \sqrt{4 \cdot 15} = 3 \cdot 5 - 2\sqrt{15} + 2\sqrt{15} = \\ &= 15; \end{aligned}$$

$$\begin{aligned} \text{д)} (\sqrt{28} - 2\sqrt{3} + \sqrt{7}) \cdot \sqrt{7} + \sqrt{84} &= \\ &= \sqrt{28} \cdot \sqrt{7} - 2\sqrt{3} \cdot \sqrt{7} + \sqrt{7} \cdot \sqrt{7} + \sqrt{21 \cdot 4} = \\ &= \sqrt{4 \cdot 7 \cdot 7} - 2\sqrt{21} + 7 + 2\sqrt{21} = 7 \cdot 2 + 7 = 21; \end{aligned}$$

$$\begin{aligned} \text{е)} (\sqrt{12} + 2\sqrt{18}) \cdot \sqrt{2} - \sqrt{96} &= \sqrt{12} \cdot \sqrt{2} + 2\sqrt{18} \cdot \sqrt{2} - \sqrt{96} = \\ &= \sqrt{4 \cdot 3 \cdot 2} + 2\sqrt{9 \cdot 2 \cdot 2} - 2\sqrt{2^4 \cdot 3 \cdot 2} = 2\sqrt{6} + 12 - 4\sqrt{6} = 12 - 2\sqrt{6}. \end{aligned}$$

№421

$$\text{a)} \sqrt{3}(\sqrt{12} - 2\sqrt{27}) = \sqrt{3} \cdot \sqrt{4 \cdot 3} - 2\sqrt{3} \cdot \sqrt{9 \cdot 3} = 3 \cdot 2 - 2 \cdot 3 \cdot 3 = 6 - 18 = -12;$$

$$\text{б)} (5\sqrt{2} - 7\sqrt{3}) \cdot \sqrt{6} = 5\sqrt{2} \cdot 6 - 7\sqrt{3} \cdot \sqrt{6} = \\ = 5 \cdot 2\sqrt{3} - 7 \cdot 3\sqrt{2} = 10\sqrt{3} - 21\sqrt{2};$$

$$\text{в)} \sqrt{8} - (\sqrt{10} - \sqrt{5}) \cdot \sqrt{5} = \sqrt{8} - \sqrt{5 \cdot 5 \cdot 2} + \sqrt{5} \cdot \sqrt{5} = \\ = \sqrt{2 \cdot 4} - 5\sqrt{2} + 5 = 2\sqrt{2} - 5\sqrt{2} + 5 = 5 - 3\sqrt{2};$$

$$\text{г)} \sqrt{48} - 2\sqrt{3} \cdot (2 - 5\sqrt{12}) = \sqrt{16 \cdot 3} - 2 \cdot 2\sqrt{3} + 2\sqrt{3} \cdot 5\sqrt{4 \cdot 3} = \\ = 4\sqrt{3} - 4\sqrt{3} + 10 \cdot 3 \cdot 2 = 60.$$

№422

$$\text{a)} (1 + 3\sqrt{2})(1 - 2\sqrt{2}) = 1 - 2\sqrt{2} + 3\sqrt{2} - 3\sqrt{2} \cdot 2\sqrt{2} = 1 + \sqrt{2} - 6 \cdot 2 = \sqrt{2} - 11;$$

$$\text{б)} (3 + \sqrt{3})(2 + \sqrt{3}) = 3 \cdot 2 + 3\sqrt{3} + 2\sqrt{3} + \sqrt{3} \cdot \sqrt{3} = \\ = 6 + 5\sqrt{3} + 3 = 9 + 5\sqrt{3};$$

$$\text{в)} (2\sqrt{2} - \sqrt{3})(3\sqrt{2} - 2\sqrt{3}) = \\ = 2\sqrt{2} \cdot 3\sqrt{2} - 2\sqrt{2} \cdot 2\sqrt{3} - 3\sqrt{3} \cdot \sqrt{2} + 2\sqrt{3} \cdot \sqrt{3} = \\ = 6 \cdot 2 - 4\sqrt{6} - 3\sqrt{6} + 2 \cdot 3 = 18 - 7\sqrt{6};$$

$$\text{г)} (\sqrt{5} - \sqrt{8})(\sqrt{5} - 3\sqrt{2}) = \sqrt{5} \cdot \sqrt{5} - \sqrt{5} \cdot 3\sqrt{2} - \sqrt{8} \cdot \sqrt{5} + 3\sqrt{2} \cdot \sqrt{8} = \\ = 5 - 3\sqrt{10} - \sqrt{4 \cdot 2} \cdot \sqrt{5} + 3\sqrt{2 \cdot 4 \cdot 2} = \\ = 5 - 3\sqrt{10} - 2\sqrt{10} + 3 \cdot 2 \cdot 2 = 17 - 5\sqrt{10};$$

$$\text{д)} (2\sqrt{5} + \sqrt{12})(\sqrt{12} - \sqrt{5}) - \sqrt{135} = \\ = 2\sqrt{5} \cdot \sqrt{12} - 2\sqrt{5} \cdot \sqrt{5} + \sqrt{12} \cdot \sqrt{12} - \sqrt{5} \cdot \sqrt{12} - \sqrt{135} = \\ = 2 \cdot 2\sqrt{15} - 10 + 12 - 2\sqrt{15} - \sqrt{9 \cdot 3 \cdot 5} =$$

$$= 4\sqrt{15} + 2 - 2\sqrt{15} - 3\sqrt{15} = 2 - \sqrt{15};$$