

## 第一章 二次根式

1	$2\sqrt{12} + 3\sqrt{45} + 3\sqrt{3} =$	2	$4\sqrt{72} + 4\sqrt{128} - \sqrt{96} + 4\sqrt{8} =$
3	$-3\sqrt{12} - 2\sqrt{27} - 2\sqrt{45} =$	4	$3\sqrt{72} - 3\sqrt{72} - 2\sqrt{6} + 4\sqrt{7} =$
5	$-2\sqrt{54} - 3\sqrt{6} + 2\sqrt{54} =$	6	$-3\sqrt{7} - 2\sqrt{8} - 4\sqrt{6} - 2\sqrt{8} =$
7	$-3\sqrt{5} + 3\sqrt{112} + 4\sqrt{27} + 2\sqrt{45} =$	8	$\sqrt{20} + 2\sqrt{45} - \sqrt{125} =$
9	$3\sqrt{54} - 3\sqrt{45} + 3\sqrt{45}$	10	$\sqrt{50a} - \sqrt{8b} - \sqrt{72a} - \sqrt{98b} =$
11	$(\sqrt{18} - \sqrt{98}) - (2\sqrt{75} + \sqrt{27}) =$	12	$5\sqrt{2} + \sqrt{8} - 2\sqrt{18} =$
13	$5\sqrt{24} + 4\sqrt{54} + \sqrt{6} =$	14	$\sqrt{10} - \sqrt{90} - \sqrt{40} =$
15	$\sqrt{48} - \frac{3}{2}\sqrt{27} + \sqrt{243} =$	16	$3\sqrt{12} + 2\sqrt{3} - \sqrt{48} =$
17	$\sqrt{5} \times \sqrt{7} =$	18	$\sqrt{32} \times \sqrt{2} =$
19	$2\sqrt{50} + \sqrt{90} - \frac{\sqrt{40}}{2} =$	20	$\frac{\sqrt{54}}{3} + \frac{\sqrt{6}}{2} - \frac{\sqrt{24}}{3} =$
21	$2\sqrt{3} \times 3\sqrt{6} =$	22	$\sqrt{5} \times 3\sqrt{15} =$
23	$4\sqrt{2} \times 2\sqrt{10} =$	24	$\sqrt{10} \times \sqrt{14} =$
25	$5\sqrt{21} \times \sqrt{7} =$	26	$4\sqrt{3} \times 2\sqrt{12} =$
27	$\sqrt{45} \times \sqrt{27} =$	28	$\sqrt{42} \times \sqrt{21} =$
29	$2\sqrt{2} \times 5\sqrt{5} =$	30	$\sqrt{13} \times \sqrt{26} =$
31	$\sqrt{11} \times 2\sqrt{33} =$	32	$\sqrt{56} \times \sqrt{24} =$
33	$\sqrt{5} \times -5\sqrt{5} =$	34	$2\sqrt{45} \times \frac{1}{3}\sqrt{10} =$
35	$\sqrt{6} \times \sqrt{12} =$	36	$3\sqrt{8} \times 2\sqrt{8} =$
37	$\sqrt{6}(\sqrt{2} + \sqrt{3}) =$	38	$\sqrt{15}(\sqrt{3} + 2) =$
39	$\sqrt{5}(\sqrt{5} + 3) =$	40	$\sqrt{10}(\sqrt{10} + 2) =$
41	$\sqrt{3}(5 + \sqrt{2}) =$	42	$-5\sqrt{3}(2 + \sqrt{5}) =$

43	$\sqrt{15}(\sqrt{3} + \sqrt{10}) =$	44	$\sqrt{5}(5 + \sqrt{5}) =$
45	$3\sqrt{6}(\sqrt{10} - \sqrt{3}) =$	46	$\sqrt{5}(-4\sqrt{6} + \sqrt{10}) =$
47	$-4\sqrt{5}(4 - 3\sqrt{10}) =$	48	$\sqrt{10}(4\sqrt{2} + \sqrt{5}) =$
49	$(\sqrt{6} + \sqrt{2})^2 =$	50	$(\sqrt{5} + \sqrt{3})(\sqrt{5} - \sqrt{3}) =$
51	$\frac{\sqrt{72}}{\sqrt{6}}$	52	$(\sqrt{8})(\sqrt{6})$
53	$(3\sqrt{2})(\sqrt{6})$	54	$\frac{\sqrt{50}}{\sqrt{5}}$
55	$(\sqrt{8})\left(\sqrt{\frac{1}{2}}\right)$	56	$\frac{27\sqrt{490}}{9\sqrt{5}}$
57	$\sqrt{\frac{7}{63}}$	58	$\left(\sqrt{\frac{2}{5}}\right)\left(\sqrt{\frac{9}{2}}\right)\left(\sqrt{\frac{10}{3}}\right)$
59	$(6\sqrt{2})(6\sqrt{18})$	60	$(2\sqrt{15})(3\sqrt{30})$
61	$2\sqrt{7} + 7\sqrt{2} =$	62	$14\sqrt{8} - 5\sqrt{8} =$
63	$\frac{24\sqrt{56}}{6\sqrt{7}}$	64	$3\sqrt{5} + 4\sqrt{5} =$
65	$\sqrt{75} - \sqrt{20}$	66	$\sqrt{8} + \sqrt{18}$
67	$7\sqrt{6} + 4\sqrt{3} - 3\sqrt{6} + 2\sqrt{2}$	68	$2\sqrt{11} + 7\sqrt{11} - 4\sqrt{11} =$
69	$3\sqrt{72} + 2\sqrt{75} - 3\sqrt{27} + \sqrt{108} =$	70	$\sqrt{250} - \sqrt{135} - \sqrt{40} + \sqrt{735} =$
71	$-5\sqrt{44} + 2\sqrt{99} =$	72	$\sqrt{27} + \sqrt{48} - 2\sqrt{3} =$
73	$3\sqrt{32} - 2\sqrt{2} =$	74	$4\sqrt{8} + 2\sqrt{2}$
75	$\sqrt{25} - \sqrt{49} =$	76	$3\sqrt{25} + 4\sqrt{16} =$
77	$5\sqrt{8} + 3\sqrt{72} =$	78	$3\sqrt{20} - 4\sqrt{45} =$
79	$\sqrt{27} + 3\sqrt{27} =$	80	$2\sqrt{5} + 4\sqrt{20} =$
81	$2\sqrt{28} + 2\sqrt{7} =$	82	$5\sqrt{54} - 2\sqrt{24} =$

83	$\sqrt{64} + \sqrt{81} =$	84	$4\sqrt{45} - \sqrt{75} =$
85	$2\sqrt{7} + 4\sqrt{63} =$	86	$\sqrt{32} + 2\sqrt{50} =$
87	$2\sqrt{8} - 4\sqrt{32} =$	88	$8\sqrt{2} + \sqrt{8} =$
89	$\sqrt{64} - \sqrt{36} =$	90	$\sqrt{36} + \sqrt{100} =$
91	$\sqrt{75} + \sqrt{108} =$	92	$\sqrt{9} + \sqrt{25} =$
93	$-\sqrt{18} - \sqrt{6} + 2\sqrt{2} =$	94	$3\sqrt{5} + \sqrt{245} =$
95	$\sqrt{192} - \sqrt{75} =$	96	$\sqrt{81} + \sqrt{100} =$
97	$3\sqrt{8} + 2\sqrt{27} + 3\sqrt{3} =$	98	$-\sqrt{5} + 3\sqrt{5} + 2\sqrt{45} =$
99	$(\sqrt{2})(\sqrt{5})$	100	$(\sqrt{8} - \sqrt{6})^2 =$
101	$(\sqrt{2} - 3)^2 =$	102	$(\sqrt{2} + \sqrt{6})(\sqrt{10} - \sqrt{3}) =$
103	$(2\sqrt{5} + \sqrt{2})(\sqrt{3} + \sqrt{6}) =$	104	$3\sqrt{3}(\sqrt{75} - 2\sqrt{12}) =$
105	$(2\sqrt{a} - 1)3\sqrt{a} =$	106	$\left(\sqrt{\frac{27}{25}} - 5\sqrt{5}\right)\sqrt{15} =$
107	$\sqrt{15}(\sqrt{6} + \sqrt{5}) =$	108	$(5\sqrt{2} - 3)^2$
109	$(\sqrt{x} + \sqrt{y})(\sqrt{x} - \sqrt{y}) =$	110	$(2\sqrt{10} - \sqrt{5})(2\sqrt{2} + 1) =$
111	$(3 + 2\sqrt{2})(5 - 3\sqrt{2}) =$	112	$\frac{5\sqrt{10}}{6\sqrt{2}}$
113	$(5 + 2\sqrt{3})(5 - 2\sqrt{3}) =$	114	$(3\sqrt{2x} + 2\sqrt{x})(3\sqrt{2x} - 2\sqrt{x}) =$
115	$\frac{6\sqrt{6}}{\sqrt{4}}$	116	$\frac{3\sqrt{6}}{\sqrt{5}}$
117	$\frac{3\sqrt{36}}{6\sqrt{4}}$	118	$\frac{3\sqrt{30}}{6\sqrt{216}}$
119	$\frac{4\sqrt{6}}{\sqrt{2}}$	120	$\frac{-4}{3\sqrt{5}}$
121	$\frac{2\sqrt{5}}{\sqrt{2}}$	122	$\frac{4\sqrt{3}}{3\sqrt{2}}$

123	$\frac{5\sqrt{5}}{4\sqrt{2}}$	124	$\frac{6\sqrt{6}}{2\sqrt{5}}$
125	$\frac{5+\sqrt{175}}{5}$	126	$\frac{12+\sqrt{108}}{6}$
127	$\frac{4+\sqrt{48}}{4}$	128	$\frac{-9-\sqrt{108}}{3}$
129	$\frac{18+\sqrt{567}}{9}$	130	$\frac{-8-\sqrt{512}}{4}$
131	$\frac{6+\sqrt{18}}{3}$	132	$\frac{15-\sqrt{75}}{5}$
133	$\frac{6-\sqrt{20}}{2}$	134	$\frac{24\sqrt{10}}{12\sqrt{3}}$
135	$\frac{8+\sqrt{48}}{4}$	136	$\frac{33\sqrt{15}}{11\sqrt{2}}$
137	$\frac{\sqrt{40}}{\sqrt{15}}$	138	$\frac{4\sqrt{21}}{7\sqrt{7}}$
139	$\frac{\sqrt{2}}{\sqrt{6}}$	140	$\frac{20+10\sqrt{2}}{\sqrt{10}}$
141	$\frac{\sqrt{5}+2}{\sqrt{5}-2} - \frac{\sqrt{5}-2}{\sqrt{5}+2} = ?$	142	$\frac{17}{3\sqrt{7}+2\sqrt{3}}$
143	$\frac{1}{\sqrt{5}+\sqrt{6}}$	144	$\frac{1}{\sqrt{3}-\sqrt{2}} - \frac{1}{\sqrt{3}+\sqrt{2}}$
145	$\sqrt{3} = 1.732, 1 + \frac{\sqrt{3}+2}{\sqrt{3}-2} = ?$	146	$(1-\sqrt{2})^2 - \frac{1}{\sqrt{2}-1}$
147	$\sqrt{8} + \frac{2}{1-\sqrt{2}}$	148	$\sqrt{2} = 1.414, \sqrt{3} = 1.732, \frac{4}{\sqrt{3}-\sqrt{2}} =$
149	$(2\sqrt{2}-3)^2 - (2\sqrt{2}+3)^2 =$	150	$\frac{6}{\sqrt{12}} + \frac{1}{\sqrt{3}+2} - 3\sqrt{\frac{1}{3}} =$
151	$\sqrt{3} = 1.732, \frac{\sqrt{3}+1}{\sqrt{3}-1} - \frac{1}{\sqrt{3}+1} =$	152	$\frac{3\sqrt{2}-2\sqrt{3}}{3\sqrt{2}+2\sqrt{3}} =$



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