

C. Eseguire le seguenti **Moltiplicazioni** tra radicali

- ① $\sqrt{2} \cdot \sqrt{8}$ [4] ② $\sqrt{32} \cdot \sqrt{50}$ [40] ③ $\sqrt{40} \cdot \sqrt{5} \cdot \sqrt{2}$ [20]
 ④ $\sqrt{72} \cdot \sqrt{3} \cdot \sqrt{6}$ [36] ⑤ $\sqrt{2} \cdot \sqrt{30} \cdot \sqrt{25}$ [$\sqrt{1500}$] ⑥ $\sqrt{a^2} \sqrt{a^6}$ [a^4]
 ⑦ $\sqrt{ab^2} \cdot \sqrt{a^2b} \cdot \sqrt{ab} = [a^2b^2]$ ⑧ $\sqrt{9a^2b^3} \cdot \sqrt{24be^2}$ [$\sqrt{216a^4b^5e^2}$]
 ⑨ $\sqrt{20ab^2c} \cdot \sqrt{45a^3b} \cdot \sqrt{bc}$ [$30a^4b^3c$] ⑩ $\sqrt{2} \cdot \sqrt{2} = [2]$
 ⑪ $\sqrt{3} \cdot \sqrt{3}$ [3] ⑫ $\sqrt{a} \sqrt{a^3}$ [a^2] ⑬ $\sqrt{a+b} \cdot \sqrt{a-b}$ [$\sqrt{a^2-b^2}$]
 ⑭ $\sqrt[3]{3} \cdot \sqrt[3]{4}$ [$\sqrt[3]{12}$] ⑮ $\sqrt[5]{2} \cdot \sqrt[5]{-2}$ [$\sqrt[5]{-4}$]
 ⑯ $\sqrt[3]{\frac{1}{3}} \cdot \sqrt[3]{-12} \cdot \sqrt[3]{-\frac{1}{4}}$ [1] ⑰ $\sqrt[4]{2} \cdot \sqrt[4]{18}$ [$\sqrt{6}$]
 ⑱ $\sqrt{2} \cdot \sqrt[6]{18} \cdot \sqrt[6]{8}$ [$\sqrt{6}$] ed ora con indici diversi:
 ⑲ $\sqrt{2} \cdot \sqrt[3]{2}$ [$\sqrt[6]{32}$] ⑳ $\sqrt{3} \cdot \sqrt[4]{3}$ [$\sqrt[12]{27}$] ㉑ $\sqrt[3]{9} \cdot \sqrt[4]{9}$ [$\sqrt[12]{3^7}$]
 ㉒ $\sqrt{3} \cdot \sqrt[4]{3} \cdot \sqrt[3]{3}$ [$\sqrt[12]{3^13}$] ㉓ $\sqrt{1+\frac{1}{2}} \cdot \sqrt[3]{1-\frac{1}{3}}$ [$\sqrt[6]{\frac{3}{2}}$]
 ㉔ $\sqrt{\frac{x+y}{x-y}} \cdot \sqrt[3]{\frac{x-y}{x+y}}$ [$\sqrt[6]{\frac{x+y}{x-y}}$]
 ㉕ $\sqrt{\frac{a^2-b^2}{a^2}} \cdot \sqrt[3]{\frac{a^3}{a^2+2ab+b^2}}$ [$\sqrt[6]{\frac{(a-b)^3}{a+b}}$]
 ㉖ $\sqrt[6]{\frac{a^3+a^2b}{a-b}} \cdot \sqrt[3]{\frac{a-b}{a^2+ab}}$ [$\sqrt[6]{\frac{a-b}{a+b}}$]
 ㉗ $\sqrt[3]{\frac{a^2-2ab+b^2}{a+b}} \cdot \sqrt[4]{\frac{a^2+2ab+b^2}{a-b}} \cdot \sqrt{\frac{1}{a-b}}$ [$\sqrt[12]{\frac{(a+b)^2}{a-b}}$]
 ㉘ $\sqrt{\frac{a+b}{a-b}} \cdot \sqrt[4]{\frac{a-b}{(a+b)^2}} \cdot \sqrt[6]{\frac{a^3-3a^2b+3ab^2-b^3}{a-b}}$ [$\sqrt[4]{a-b}$]

D. Eseguire le seguenti **Divisioni** tra radicali

$$\begin{array}{l}
 \textcircled{1} \frac{\sqrt{12}}{\sqrt{6}} \quad [\sqrt{2}] \quad \textcircled{2} \frac{\sqrt{32}}{\sqrt{4}} \quad [\sqrt{8}] \quad \textcircled{3} \frac{\sqrt{28}}{\sqrt{7}} \quad [2] \quad \textcircled{4} \frac{\sqrt{3}}{\sqrt{\frac{1}{2}}} \quad [\sqrt{6}] \\
 \textcircled{5} \frac{\sqrt{\frac{12}{7}}}{\sqrt{12}} \quad [\sqrt{\frac{1}{7}}] \quad \textcircled{6} \frac{\sqrt{a^4}}{\sqrt{a^7}} \quad [a] \quad \textcircled{7} \frac{\sqrt{a-b}}{\sqrt{a^2-b^2}} \quad \left[\frac{1}{\sqrt{a-b}} \right] \\
 \textcircled{8} \frac{\sqrt{27ab^3}}{\sqrt{18a^3b}} \quad \left[\sqrt{\frac{3}{2} \frac{b^2}{a^2}} \right] \quad \textcircled{9} \frac{\sqrt{60\text{mm}^3}}{\sqrt{12\text{mm}}} \quad \textcircled{10} \frac{\sqrt{2a}}{\sqrt{3a}} \quad \left[\sqrt{\frac{2}{3}} \right] \\
 \textcircled{11} (\sqrt{2x} : \sqrt{x}) : \sqrt{3} \quad \textcircled{12} \sqrt{5} : \sqrt{\frac{1}{2}a} \quad \left[\sqrt{\frac{10}{a}} \right] \quad \textcircled{13} \frac{\sqrt[3]{12}}{\sqrt[3]{4}} \quad \left[\sqrt[3]{3} \right] \\
 \textcircled{14} \sqrt[3]{3} : \sqrt[3]{12} : \sqrt[3]{2} \quad \left[\frac{1}{2} \right] \quad \textcircled{15} \sqrt[3]{250} : \sqrt[3]{-2} \quad [-5] \\
 \textcircled{16} \sqrt[6]{128} : \sqrt[6]{8} : \sqrt[6]{4} \quad \left[\sqrt[3]{2} \right] \quad \text{ed ora con indici diversi} \\
 \textcircled{17} \sqrt[8]{81} : \sqrt[5]{9} \quad \left[\sqrt[10]{3} \right] \quad \textcircled{18} \sqrt[4]{\frac{27}{7}} : \sqrt[3]{\frac{3}{49}} \quad \left[\sqrt[12]{21^5} \right] \\
 \textcircled{19} \sqrt{\frac{a^2-1}{3}} : \sqrt[3]{3a+3} \quad \left[\sqrt{\frac{(a+1)(a-1)^3}{3^5}} \right] \\
 \textcircled{20} \sqrt[3]{(2y-1)^2} : \sqrt{2y-1} \quad \left[\sqrt[6]{2y-1} \right] \\
 \textcircled{21} \sqrt[3]{\frac{x}{x+y}} : \sqrt{\frac{1}{x^2+2xy+y^2}} \quad \left[\sqrt[3]{x(x+y)^2} \right] \\
 \textcircled{22} (\sqrt{a} \cdot \sqrt[3]{a^2}) : (\sqrt[6]{a} \cdot \sqrt[3]{a}) \quad \left[\sqrt[3]{a^2} \right] \\
 \textcircled{23} \left(\sqrt{\frac{a^2b}{c}} \cdot \sqrt{\frac{ab^2}{c}} \right) : \left(\sqrt[3]{\frac{a^2b}{c}} \cdot \sqrt{\frac{ab^2}{c}} \right) \quad \left[\sqrt[6]{\frac{a^4b}{c}} \right]
 \end{array}$$

E. Trasportare i fattori fuori dal segno di radice

$$\begin{array}{l}
 \textcircled{1} \sqrt{a^5 b^7} [a^2 b^3 \sqrt{ab}] \quad \textcircled{2} \sqrt{a^3 b^5} [ab^2 \sqrt{ab}] \\
 \textcircled{3} \sqrt{75} = \sqrt{3 \cdot 5^2} = [5\sqrt{3}] \quad \textcircled{4} \sqrt{32} [4\sqrt{2}] \quad \textcircled{5} \sqrt{50} [5\sqrt{2}] \\
 \textcircled{6} \sqrt{1000} [10\sqrt{10}] \quad \textcircled{7} \sqrt{\frac{32}{27}} \left[\frac{4}{3}\sqrt{\frac{2}{3}}\right] \quad \textcircled{8} \sqrt{50a^3 b^5} [5ab^2 \sqrt{2ab}] \\
 \textcircled{9} \sqrt{\frac{a}{9}} \left[\frac{1}{3}\sqrt{a}\right] \quad \textcircled{10} \sqrt{a^{10} b^6 c} [a^5 b^3 \sqrt{c}] \quad \textcircled{11} \sqrt{\frac{x^2 y^3}{z^4}} \left[\frac{xy\sqrt{y}}{z^2}\right] \\
 \textcircled{12} \sqrt{\frac{40x^5}{28y^7}} \left[\frac{x^2}{y^3} \sqrt{\frac{10x}{7y}}\right] \quad \textcircled{13} \sqrt[3]{16} [2\sqrt[3]{2}] \\
 \textcircled{14} \sqrt[3]{81} [3\sqrt[3]{3}] \quad \textcircled{15} \sqrt[4]{32} [2\sqrt[4]{2}] \quad \textcircled{16} \sqrt[3]{48} [2\sqrt[3]{6}] \\
 \textcircled{17} \sqrt[3]{\frac{5}{27}} \left[\frac{1}{3}\sqrt[3]{5}\right] \quad \textcircled{18} \sqrt[3]{\frac{3}{64}} \left[\frac{1}{4}\sqrt[3]{3}\right] \quad \textcircled{19} \sqrt[3]{3x^3} [x\sqrt[3]{3}] \\
 \textcircled{20} \sqrt[5]{32x^2 y^5 z^{15}} [2yz^3 \sqrt[5]{x^2}] \quad \textcircled{21} \sqrt[3]{a^5 + a^3} [a\sqrt[3]{a+1}]
 \end{array}$$


F. Trasportare i fattori dentro il segno di radice

$$\begin{array}{l}
 \textcircled{1} 2\sqrt{5} [\sqrt{20}] \quad \textcircled{2} 3 \cdot \sqrt{\frac{2}{27}} \left[\sqrt{\frac{2}{3}}\right] \quad \textcircled{3} 6\sqrt{2} [\sqrt{72}] \\
 \textcircled{4} 2\sqrt{7} [\sqrt{28}] \quad \textcircled{5} 7\sqrt{2} [\sqrt{98}] \quad \textcircled{6} \frac{1}{2}\sqrt{5} \left[\sqrt{\frac{5}{4}}\right] \\
 \textcircled{7} \frac{1}{3}\sqrt{27} [\sqrt{3}] \quad \textcircled{8} 2\sqrt{\frac{9}{4}} [\sqrt{9}] \quad \textcircled{9} 3\sqrt{\frac{1}{6}} \left[\sqrt{\frac{3}{2}}\right] \\
 \textcircled{10} a\sqrt{\frac{b}{a}} [\sqrt{ab}] \quad \textcircled{11} ab \cdot \sqrt{\frac{1}{ab}} [\sqrt{ab}] \quad \textcircled{12} a^2 \sqrt{a} [\sqrt{a^5}] \\
 \textcircled{13} ab^2 e^3 \sqrt{x} [\sqrt{a^2 b^4 e^6 x}] \quad \textcircled{14} a^2 \cdot \sqrt{\frac{1}{a}} [\sqrt{a^3}] \\
 \textcircled{15} 2\sqrt[5]{2} [\sqrt[5]{64}] \quad \textcircled{16} 7^3 \sqrt[5]{7} [\sqrt[5]{7^6}] \quad \textcircled{17} \frac{2}{3} \cdot \sqrt[5]{\frac{9}{4}} \left[\sqrt[5]{\frac{8}{27}}\right] \\
 \textcircled{18} a^3 \sqrt[3]{\frac{1}{a}} [\sqrt[3]{a^2}] \quad \textcircled{19} (a-1) \sqrt[3]{\frac{1}{a^3 - 2a + 1}} [\sqrt[3]{a-1}] \quad \textcircled{20} x^3 \cdot \sqrt[5]{\frac{1}{x^2}} \left[\sqrt[5]{x^{13}}\right] \\
 \textcircled{21} \frac{(a+b)^2}{a} \sqrt{\frac{a^2}{(a+b)^3}} [\sqrt{a+b}] \quad \textcircled{22} \left(\frac{1}{x} + 1\right) \sqrt{\frac{x}{xy+y}} \left[\sqrt{\frac{1+x}{xy}}\right]
 \end{array}$$

G. Eseguire le seguenti **Potenze** di radicali

$$\begin{array}{lll}
 \textcircled{1} (3\sqrt{2})^2 [2] & \textcircled{2} (\sqrt{5})^3 [5\sqrt{5}] & \textcircled{3} (\sqrt{2})^7 [8\sqrt{2}] \\
 \textcircled{4} (\sqrt[3]{7})^4 [7\sqrt[3]{7}] & \textcircled{5} (\sqrt[4]{3})^6 [3\sqrt{3}] & \textcircled{6} (\sqrt[3]{2})^5 [2\sqrt[3]{4}] \\
 \textcircled{7} (3\sqrt{2})^2 [18] & \textcircled{8} (2\sqrt{5})^2 [20] & \textcircled{9} (\sqrt{7})^3 [7\sqrt{7}] \\
 \textcircled{10} (5\sqrt{2})^2 [50] & \textcircled{11} (\sqrt[3]{2})^5 [2\sqrt[3]{4}] & \textcircled{12} (\sqrt[3]{ab^2})^2 [b\sqrt[3]{a^2b}] \\
 \textcircled{13} (\sqrt[3]{a^2b})^4 [a^2b\sqrt[3]{a^4b}] & \textcircled{14} (\sqrt[5]{a^4b^2c^4})^4 [a^3bc\sqrt[5]{ab^3c^3}] \\
 \textcircled{15} \left(\frac{ab}{c}\sqrt[3]{\frac{e^2}{ab}}\right)^3 \left[\frac{a^2b^4}{c}\right] & \textcircled{16} \left(\frac{5x}{4}\sqrt{\frac{8}{25x^3}}\right)^4 \left[\frac{1}{4x^2}\right]
 \end{array}$$

H. Eseguire le seguenti **Radici** di radicali

$$\begin{array}{lll}
 \textcircled{1} \sqrt{\sqrt{5}} [\sqrt[4]{5}] & \textcircled{2} \sqrt[3]{\sqrt{2}} [\sqrt[6]{2}] & \textcircled{3} \sqrt[5]{\sqrt[3]{10}} [\sqrt[15]{10}] \\
 \textcircled{4} \sqrt{\sqrt{32}} [2\sqrt[4]{2}] & \textcircled{5} \sqrt[3]{\sqrt[3]{27}} [3\sqrt[6]{3}] & \textcircled{6} \sqrt{3\sqrt{3}} [\sqrt[4]{27}] \\
 \textcircled{7} \sqrt[3]{2\sqrt{2}} [2] & \textcircled{8} \sqrt[4]{9\sqrt{3}} [\sqrt[8]{243}] & \textcircled{9} \sqrt{2\sqrt[3]{2}} [\sqrt[6]{4}] \\
 \textcircled{10} \sqrt{3\sqrt{\sqrt{3}}} [\sqrt[8]{243}] & \textcircled{11} \sqrt{\sqrt{2\sqrt{2}}} [\sqrt[8]{8}] \\
 \textcircled{12} \sqrt{\sqrt[3]{2\sqrt{2}}} [\sqrt[6]{2}] & \textcircled{13} \sqrt{a\sqrt{a}} [\sqrt[4]{a^3}] \\
 \textcircled{14} \sqrt{a\sqrt{a\sqrt{a}}} [\sqrt[8]{a^7}] & \textcircled{15} \sqrt[3]{\frac{a}{b}\sqrt{\frac{b}{a}}\sqrt{\frac{a}{b}}} [\sqrt[6]{\frac{a}{b}}] \\
 \textcircled{16} \sqrt[5]{a^2b\sqrt[3]{ab^2}} [\sqrt[15]{a^2b^5}]
 \end{array}$$


I. Calcolare le seguenti somme algebriche di radicali

$$\begin{aligned} \textcircled{1} & 11\sqrt{5} + 6\sqrt{2} - (8\sqrt{5} + 3\sqrt{2}) \quad [3\sqrt{5} + 3\sqrt{2}] & \textcircled{2} & \sqrt{a} - 2\sqrt{a} \quad [-\sqrt{a}] \\ \textcircled{3} & \sqrt{a} + \sqrt{a} + \sqrt{a} \quad [3\sqrt{a}] & \textcircled{4} & 5\sqrt{3} + 3\sqrt{7} - [2\sqrt{3} - (4\sqrt{7} - 3\sqrt{3})] \quad [7\sqrt{7}] \\ \textcircled{5} & \sqrt{b} - \sqrt{b} \quad [0] & \textcircled{6} & 3\sqrt{a} - 2\sqrt{b} + 2\sqrt{a} + \frac{1}{2}\sqrt{b} \quad [5\sqrt{a} - \frac{3}{2}\sqrt{b}] \end{aligned}$$

L. Eseguire le seguenti somme algebriche, portando prima fuori dai singoli radicali i fattori possibili

$$\begin{aligned} \textcircled{1} & \sqrt{125} - \sqrt{45} + \sqrt{20} = \sqrt{5^3} - \sqrt{5 \cdot 3^2} + \sqrt{2^2 \cdot 5} = 5\sqrt{5} - 3\sqrt{5} + 2\sqrt{5} = 4\sqrt{5} \\ \textcircled{2} & 2\sqrt{12} - \sqrt{27} + \sqrt{3} \quad [2\sqrt{3}] & \textcircled{3} & 3\sqrt{50} - 5\sqrt{8} + 7\sqrt{18} - \sqrt{32} \quad [22\sqrt{2}] \\ \textcircled{4} & 7\sqrt{54} - \sqrt{150} + 2\sqrt{6} - \sqrt{24} \quad [16\sqrt{6}] & \textcircled{5} & 5\sqrt{18} - 7\sqrt{12} + \sqrt{75} - \sqrt{98} \quad [8\sqrt{2} - 9\sqrt{3}] \\ \textcircled{6} & 3\sqrt{48} + 2\sqrt{32} + \sqrt{98} - 4\sqrt{27} - 4\sqrt{450} \quad [0] & \textcircled{7} & \sqrt{a^3} - 3\sqrt{a} \quad [(a-3)\sqrt{a}] \\ \textcircled{8} & \sqrt{75} + 3\sqrt{18} - 2\sqrt{12} - 2\sqrt{50} \quad [\sqrt{3} - \sqrt{2}] & \textcircled{9} & \sqrt{405x^5} - \sqrt{180x^3} + \sqrt{5x} \quad [(3x-1)^2\sqrt{5x}] \\ \textcircled{10} & 3\sqrt{128} - 2\sqrt{72} - 2\sqrt{50} + \sqrt{8} \quad [0] & & \\ \textcircled{11} & \sqrt{a^5} - 3a^2\sqrt{a} + 2a^2\sqrt{a} \quad [0] & \textcircled{12} & 2x\sqrt{xy} + 3y\sqrt{xy} - \sqrt{4x^3y} - \sqrt{9xy^3} \quad [0] \\ \textcircled{13} & \sqrt[3]{250} - \sqrt[3]{54} + \sqrt[3]{16} \quad [4\sqrt[3]{2}] & \textcircled{14} & \sqrt[3]{x^6y} + \sqrt[3]{y^7} + \sqrt[3]{8x^3y^5} \quad [(x+y)\sqrt[3]{y}] \end{aligned}$$

M. Eseguire le seguenti operazioni, semplificando i risultati

$$\begin{aligned} \textcircled{1} & (2\sqrt{12} - \sqrt{75}) \cdot \sqrt{3} = (2\sqrt{3 \cdot 2^2} - \sqrt{3 \cdot 5^2}) \cdot \sqrt{3} = (2 \cdot 2\sqrt{3} - 5 \cdot \sqrt{3}) \cdot \sqrt{3} = (4\sqrt{3} - 5\sqrt{3}) \cdot \sqrt{3} = \\ & = -\sqrt{3} \cdot \sqrt{3} = -(\sqrt{3})^2 = -\sqrt{3}^2 = -3 \\ \textcircled{2} & (5\sqrt{\frac{1}{50}} + \sqrt{8}) \cdot \sqrt{2} \quad [5] & \textcircled{3} & (\sqrt{2} + \sqrt{3}) \cdot (3\sqrt{2} - \sqrt{3}) \quad [3 + 2\sqrt{6}] \\ \textcircled{4} & (5\sqrt{3} + 2)(5\sqrt{3} - 2) \quad [71] & \textcircled{5} & (\sqrt{5} - 2\sqrt{2})^2 + (\sqrt{2} - \sqrt{3} + 2)^2 + 4\sqrt{3} \quad [20 - 6\sqrt{6} + 4\sqrt{2}] \\ \textcircled{6} & (3 + \sqrt{3})^2 \quad [12 + 6\sqrt{3}] & \textcircled{7} & (1 + \sqrt{2})^2 \quad [3 + 2\sqrt{2}] & \textcircled{8} & (1 + \sqrt{2})(1 - \sqrt{2}) \quad [-1] \end{aligned}$$

N. Risolvere le seguenti espressioni con radicali

$$\begin{aligned}
 ① & \frac{y\sqrt{x}}{x+y} \cdot \sqrt{\frac{x^2+xy}{y^2}} - \sqrt{\frac{x}{x+y}} \cdot \frac{\sqrt{x^2y+y^3+2xy^2}}{\sqrt{xy}} \quad \left[\frac{-y}{\sqrt{x+y}} \right] \\
 ② & \frac{x}{\sqrt{x+y}} - \sqrt{x+y} \quad \left[\frac{-y}{\sqrt{x+y}} \right] \\
 ③ & 3\sqrt{\frac{b^2+1}{a^4}} - \sqrt{\frac{a^4b^2+a^4}{9}} + \frac{1}{3}a^2\sqrt{b^2+1} \quad \left[\frac{3}{a^2}\sqrt{b^2+1} \right] \\
 ④ & \left(\sqrt{16-16x^2} - \sqrt{4-4x^2} - (1-x)\sqrt{\frac{1+x}{1-x}} \right) : \sqrt{1+x} \quad \left[\sqrt{1-x} \right] \\
 ⑤ & \left(\sqrt{9x^2-81} - 4(x+3) \cdot \sqrt{\frac{x-3}{x+3}} + \sqrt{4x^2-36} \right) : \sqrt{x-3} \quad \left[\sqrt{x+3} \right] \\
 ⑥ & \sqrt{9x+9} + \sqrt{4xy^2+4y^2} + \sqrt{9y+9} + \sqrt{4y^3+4y^2} \quad \left[(2y+3)(\sqrt{x+1} + \sqrt{y+1}) \right]
 \end{aligned}$$

O. Razionalizzare i denominatori delle seguenti frazioni

$$\begin{aligned}
 ① & \frac{2}{\sqrt{2}} = \frac{2 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{2\sqrt{2}}{2} = \sqrt{2} \quad ② \frac{3}{\sqrt{3}} \quad \left[\sqrt{3} \right] \quad ③ \frac{5}{\sqrt{5}} \quad \left[\sqrt{5} \right] \\
 ④ & \frac{1}{\sqrt{2}} \quad \left[\frac{\sqrt{2}}{2} \right] \quad ⑤ \frac{1}{\sqrt{3}} \quad \left[\frac{\sqrt{3}}{3} \right] \quad ⑥ \frac{2}{\sqrt{8}} = \left[\frac{\sqrt{2}}{2} \right] \quad ⑦ \frac{3}{\sqrt{12}} \quad \left[\frac{\sqrt{3}}{2} \right] \\
 ⑧ & \frac{15}{\sqrt{20}} \quad \left[\frac{3\sqrt{5}}{2} \right] \quad ⑨ \frac{6}{\sqrt{3}} \quad \left[2\sqrt{3} \right] \quad ⑩ \frac{6}{\sqrt{2}} \quad \left[3\sqrt{2} \right] \quad ⑪ \frac{4a}{\sqrt{12a}} \quad \left[\frac{2\sqrt{3a}}{3} \right] \\
 ⑫ & \frac{6ab}{\sqrt{20b}} \quad \left[3\sqrt{20b} \right] \quad ⑬ \frac{30b}{2\sqrt{60b}} \quad \left[\frac{\sqrt{60b}}{4} \right] \quad ⑭ \frac{3x}{\sqrt{3xy}} \quad \left[\frac{\sqrt{3xy}}{y} \right] \\
 ⑮ & \frac{1}{\sqrt[3]{2}} \quad \left[\frac{\sqrt[3]{4}}{2} \right] \quad ⑯ \frac{1}{\sqrt[5]{8}} \quad \left[\frac{\sqrt[5]{2}}{2} \right] \quad ⑰ \frac{10}{\sqrt[3]{25}} \quad \left[2\sqrt[3]{5} \right] \\
 ⑱ & \frac{1}{\sqrt{3}+\sqrt{2}} \quad \left[\sqrt{3}-\sqrt{2} \right] \quad ⑲ \frac{1}{\sqrt{3}-\sqrt{2}} \quad \left[\sqrt{3}+\sqrt{2} \right] \quad ⑳ \frac{1}{\sqrt{3}-2} \quad \left[-(\sqrt{3}+2) \right] \\
 ㉑ & \frac{2+\sqrt{3}}{2-\sqrt{3}} \quad \left[7+4\sqrt{3} \right] \quad ㉒ \frac{\sqrt{7}-\sqrt{3}}{\sqrt{7}+\sqrt{3}} \quad \left[\frac{5-\sqrt{21}}{2} \right] \quad ㉓ \frac{5}{\sqrt{7}+\sqrt{2}} \quad \left[\sqrt{7}-\sqrt{2} \right]
 \end{aligned}$$