

①  $\frac{16\sqrt{175}}{10\sqrt{478}}$

$\frac{8\sqrt{25}}{5\sqrt{64}}$

$\frac{8 \cdot 5}{5 \cdot 8}$

$\frac{40}{40}$

$\boxed{1}$

②  $\frac{21\sqrt{90}}{6\sqrt{147}}$

$\frac{7\sqrt{30}}{3\sqrt{49}}$

$\frac{7\sqrt{30}}{3 \cdot 7}$

$\frac{7\sqrt{30}}{21}$

$\boxed{\frac{\sqrt{30}}{3}}$

③  $\frac{32\sqrt{392}}{14\sqrt{192}}$

$\frac{16\sqrt{49}}{7\sqrt{24}}$

$\frac{16 \cdot 7}{7 \cdot 2\sqrt{6}}$

$\frac{112}{14\sqrt{6}}$

$\frac{8}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}}$

$\frac{8\sqrt{6}}{6\sqrt{6}}$

~~$\frac{8\sqrt{6}}{6}$~~

$\boxed{\frac{4\sqrt{6}}{3}}$

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$\frac{\sqrt{24}}{\sqrt{4 \cdot 6}}$   
 $\frac{2\sqrt{6}}{2\sqrt{6}}$

④  $\frac{9\sqrt{726}}{66\sqrt{486}}$

$\frac{3\sqrt{121}}{22\sqrt{81}}$

$\frac{3 \cdot 11}{22 \cdot 9}$

$\frac{33}{198}$

$\boxed{\frac{1}{6}}$

⑤  $\frac{18\sqrt{675}}{30\sqrt{72}}$

$\frac{3\sqrt{75}}{5\sqrt{8}}$

$\rightarrow \frac{\sqrt{75}}{\sqrt{25 \cdot 3}} = \frac{5\sqrt{3}}{5\sqrt{3}}$

$\rightarrow \frac{\sqrt{8}}{\sqrt{4 \cdot 2}} = \frac{2\sqrt{2}}{2\sqrt{2}}$

$\frac{3 \cdot 5\sqrt{3}}{5 \cdot 2\sqrt{2}}$

$\frac{15\sqrt{3}}{10\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

⑥  $\frac{28\sqrt{338}}{52\sqrt{294}}$

$\frac{7\sqrt{169}}{13\sqrt{147}} \rightarrow \frac{\sqrt{147}}{\sqrt{49 \cdot 3}} = \frac{\sqrt{3}}{\sqrt{3}}$

$\frac{7 \cdot 13}{13 \cdot 7\sqrt{3}}$

$\frac{91}{91\sqrt{3}}$

$\frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$

$\frac{\sqrt{3}}{\sqrt{9}}$

$\boxed{\frac{\sqrt{3}}{3}}$

$$\textcircled{7} \frac{\sqrt{6}}{5-\sqrt{3}} \cdot \frac{5+\sqrt{3}}{5+\sqrt{3}}$$

$$\boxed{\frac{5\sqrt{6}+3\sqrt{2}}{22}}$$

$$\frac{5+\sqrt{3}}{5+\sqrt{3}}$$

Denom  
 $(5-\sqrt{3})(5+\sqrt{3})$   
 $25+5\sqrt{3}-5\sqrt{3}-\sqrt{9}$   
 $25-3$   
 $22$

Numerator  
 $\sqrt{6}(5+\sqrt{3})$   
 $5\sqrt{6}+\sqrt{18}$   
 $\sqrt{9 \cdot 2}$   
 $5\sqrt{6}+3\sqrt{2}$

$$\textcircled{8} \frac{5-\sqrt{10}}{9-\sqrt{2}} \cdot \frac{9+\sqrt{2}}{9+\sqrt{2}}$$

$$\boxed{\frac{45+5\sqrt{2}-9\sqrt{10}-2\sqrt{5}}{79}}$$

Denom  
 $(9-\sqrt{2})(9+\sqrt{2})$   
 $81+9\sqrt{2}-9\sqrt{2}-\sqrt{4}$   
 $81-2$

Numerator  
 $(5-\sqrt{10})(9+\sqrt{2})$   
 $45+5\sqrt{2}-9\sqrt{10}-\sqrt{20}$   
 $\sqrt{4 \cdot 5}$   
 $2\sqrt{5}$   
 $45+5\sqrt{2}-9\sqrt{10}-2\sqrt{5}$

$$\textcircled{9} \frac{10-\sqrt{5}}{7-\sqrt{5}} \cdot \frac{7+\sqrt{5}}{7+\sqrt{5}}$$

$$\boxed{\frac{65-3\sqrt{5}}{44}}$$

Denom.  
 $(7-\sqrt{5})(7+\sqrt{5})$   
 $49+7\sqrt{5}-7\sqrt{5}-\sqrt{25}$   
 $49-5$   
 $44$

Numerator  
 $(10-\sqrt{5})(7+\sqrt{5})$   
 $70+10\sqrt{5}-7\sqrt{5}-\sqrt{25}$   
 $70+10\sqrt{5}-7\sqrt{5}-5$   
 $65-3\sqrt{5}$

$$\textcircled{10} \frac{8-\sqrt{5}}{6+\sqrt{10}} \cdot \frac{6-\sqrt{10}}{6-\sqrt{10}}$$

$$\boxed{\frac{48-8\sqrt{10}-6\sqrt{5}+5\sqrt{2}}{26}}$$

Denom  
 $(6+\sqrt{10})(6-\sqrt{10})$   
 $36-6\sqrt{10}+6\sqrt{10}-\sqrt{100}$   
 $36-10$   
 $26$

Numerator  
 $(8-\sqrt{5})(6-\sqrt{10})$   
 $48-8\sqrt{10}-6\sqrt{5}+\sqrt{50}$   
 $\sqrt{25 \cdot 2}$   
 $5\sqrt{2}$   
 $48-8\sqrt{10}-6\sqrt{5}+5\sqrt{2}$