平方根（有理化）

組　　番　名前

1　次の数の分母を有理化しなさい。

① $\dfrac{1}{\sqrt{3}}$ = $\dfrac{1 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}}$

= $\dfrac{\sqrt{3}}{3}$

② $\dfrac{\sqrt{7}}{\sqrt{5}}$ = $\dfrac{\sqrt{7} \times \sqrt{5}}{\sqrt{5} \times \sqrt{5}}$

= $\dfrac{\sqrt{35}}{5}$

③ $\dfrac{4}{\sqrt{2}}$ = $\dfrac{4 \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}}$

= $\dfrac{4\sqrt{2}}{2}$

= $2\sqrt{2}$

④ $\dfrac{9}{\sqrt{63}}$ = $\dfrac{9 \times \sqrt{7}}{3\sqrt{7} \times \sqrt{7}}$

= $\dfrac{3\sqrt{7}}{7}$

⑤ $\dfrac{8\sqrt{3}}{\sqrt{2}}$ = $\dfrac{8\sqrt{3} \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}}$

= $\dfrac{8\sqrt{6}}{2}$

= $4\sqrt{3}$

⑥ $\dfrac{9}{\sqrt{18}}$ = $\dfrac{9}{3\sqrt{2}}$

= $\dfrac{3 \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}}$

= $\dfrac{3\sqrt{2}}{2}$

2　次の計算をしなさい。答えは、分母を有理化して表すこと。

① $\sqrt{3} \div \sqrt{5}$

= $\dfrac{\sqrt{3} \times \sqrt{5}}{\sqrt{5} \times \sqrt{5}}$

= $\dfrac{\sqrt{15}}{5}$

② $\sqrt{8} \div \sqrt{27}$

= $\dfrac{2\sqrt{2} \times \sqrt{3}}{3\sqrt{3} \times \sqrt{3}}$

= $\dfrac{2\sqrt{6}}{9}$

③ $\sqrt{28} \div \sqrt{21}$

= $\dfrac{2 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}}$

= $\dfrac{2\sqrt{3}}{3}$

④ $15 \div \sqrt{3}$

= $\dfrac{15 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}}$

= $\dfrac{15\sqrt{3}}{3}$ = $5\sqrt{3}$

⑤ $\sqrt{2} \div 7\sqrt{6}$

= $\dfrac{1 \times \sqrt{3}}{7\sqrt{3} \times \sqrt{3}}$

= $\dfrac{\sqrt{3}}{21}$

⑥ $4\sqrt{3} \div \sqrt{32}$

= $\dfrac{4\sqrt{3} \times \sqrt{2}}{4\sqrt{2} \times \sqrt{2}}$

= $\dfrac{\sqrt{6}}{2}$

3　$\sqrt{3} = 1.732$として、$\dfrac{1}{\sqrt{3}}$のおよその値を、四捨五入して小数第２位まで求めなさい。

$\dfrac{1 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}}$ = $\dfrac{\sqrt{3}}{3}$ = $1.732 \div 3$

= $\underline{0.58}$

4　$\sqrt{2} = 1.414$，$\sqrt{20} = 4.472$ として次の値を求めなさい。

① $\sqrt{200}$

= $10\sqrt{2}$

= 10×1.414

= 14.14

② $\sqrt{2000}$

= $10\sqrt{20}$

= 10×4.472

= 44.72

③ $\sqrt{0.2}$

= $\sqrt{\dfrac{20}{100}}$

= $\dfrac{\sqrt{20}}{10}$

= $4.472 \times \dfrac{1}{10}$

= 0.4472

④ $\sqrt{0.02}$

= $\sqrt{\dfrac{2}{100}}$

= $\dfrac{\sqrt{2}}{10}$

= $1.414 \times \dfrac{1}{10}$

= 0.1414