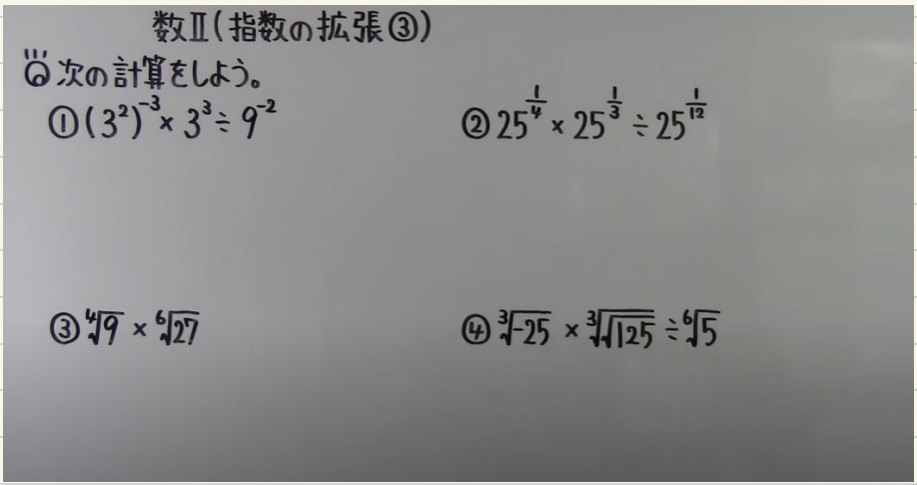
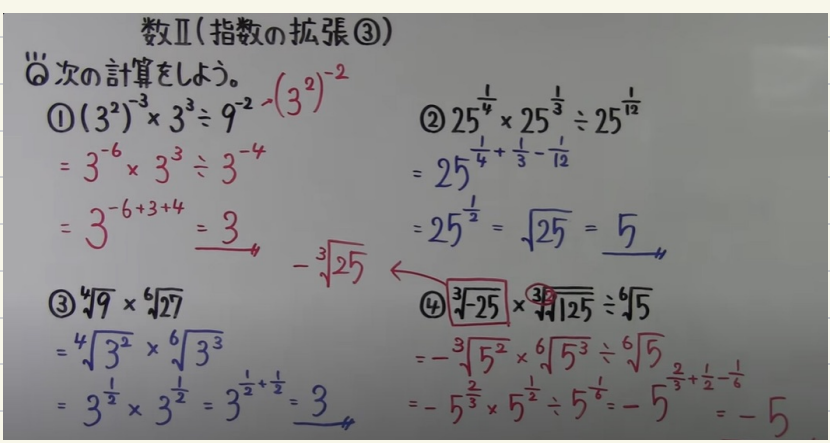
指数の拡張3


数Ⅱ(指数の拡張③)
次の計算をしよう。
①$(3^2)^{-3}\times 3^3\div 9^{-2}$
②$25^{\frac{1}{4}}\times 25^{\frac{1}{3}}\div 25^{\frac{1}{12}}$
③$\sqrt[4]{9}\times\sqrt[6]{27}$
④$\sqrt[3]{-25}\times\sqrt[3]{\sqrt{125}}\div\sqrt[6]{5}$


数Ⅱ(指数の拡張③)
次の計算をしよう。
①$(3^2)^{-3}\times 3^3\div 9^{-2}$
$(3^2)^{-2}$
$=3^{-6}\times 3^3\div 3^{-4}$
$=3^{-6+3+4}=3$
②$25^{\frac{1}{4}}\times 25^{\frac{1}{3}}\div 25^{\frac{1}{12}}$
$=25^{\frac{1}{4}+\frac{1}{3}-\frac{1}{12}}$
$=25^{\frac{1}{2}}=\sqrt{25}=5$
$-\sqrt[3]{25}$
③$\sqrt[4]{9}\times\sqrt[6]{27}$
$=\sqrt[4]{3^2}\times\sqrt[6]{3^3}$
$=3^{\frac{1}{2}}\times 3^{\frac{1}{2}}=3^{\frac{1}{2}+\frac{1}{2}}=3$
④$\sqrt[3]{-25}\times\sqrt[3]{\sqrt{125}}\div\sqrt[6]{5}$
$=-\sqrt[3]{5^2}\times\sqrt[6]{5^3}\div\sqrt[6]{5}$
$=-5^{\frac{2}{3}}\times 5^{\frac{1}{2}}\div 5^{\frac{1}{6}}=-5^{\frac{2}{3}+\frac{1}{2}-\frac{1}{6}}$
$=-5$