

$b = \sqrt[3]{\sqrt{9}+2}, a = \sqrt[3]{\sqrt{9}-2} \rightarrow (a+b)^3(a-b)^3 = (a^3-b^3)^3 = (\sqrt{9}-2 - \sqrt{9+2})^3 = (2\sqrt{3}-2\sqrt{3})^3 = 2^3 \cdot 19\sqrt{3}$ $\underbrace{(a^3+b^3-2ab)^3}_{(a-b)^3} \underbrace{(a^3+b^3+2ab)^3}_{(a+b)^3} = t^3(2-\sqrt{3})$ $\rightarrow 19(2-\sqrt{3}) = t(2-\sqrt{3}) \Rightarrow \boxed{t=19} \checkmark$	(2) 6
$a = \sqrt[3]{19-4\sqrt{3}} = \sqrt[3]{(2-\sqrt{3})^3} = 2-\sqrt{3}$ $\text{if } Y = a + \frac{1}{a} \rightarrow (Y+\sqrt{3})(Y-\sqrt{3})^2 = (Y^2-3)^2 \rightarrow Y^2 = a^2 + \frac{1}{a^2} + 2 \xrightarrow{a=2-\sqrt{3}} 2\sqrt{3} + 2 + 2\sqrt{3} + 2 = 9$ $\rightarrow (9-3)^2 = 6^2 = 19 \rightarrow 3^t = 19 \Rightarrow \boxed{t=3} \checkmark$	(2) 7
$A = \underbrace{\left(\frac{1}{6} \times 19\right)^{\frac{1}{3}} \times 19^{\frac{1}{3}}}_{19^{\frac{2}{3}}} \rightarrow A = 19^{\frac{2}{3}} \times 19^{\frac{1}{3}} = 19^{\frac{3}{3}} = 19 \Rightarrow (19)^{-\frac{1}{3}} = 19^{-\frac{1}{3}} = \boxed{\frac{1}{19}} \checkmark$	(2) 8
$\sqrt[5]{a} = 2\sqrt{a} \times a^{\frac{10}{5}} \quad a^{\frac{1}{5}} = 2\sqrt{a} \times a^{\frac{10}{5}} \xrightarrow{\div a^{\frac{10}{5}}} a^{-\frac{19}{5}} = 2\sqrt{a} \Rightarrow \frac{1}{a^{\frac{19}{5}}} = 2\sqrt{a} \rightarrow \frac{1}{a} = \sqrt{2a} = 2\sqrt{3}$ $\frac{(\frac{1}{a}-3)}{1+\sqrt{3}} = \frac{2\sqrt{3}-3}{1+\sqrt{3}} \times \frac{1-\sqrt{3}}{1-\sqrt{3}} = \frac{2\sqrt{3}-3-3\sqrt{3}+3}{1-3} = \frac{-1\sqrt{3}+0}{-2} = \frac{1\sqrt{3}}{2} = 3-2\sqrt{3} = \boxed{2(2-\sqrt{3})} \checkmark$	(2) 9
$Y = \sqrt{x+a} + \sqrt{x-a} \rightarrow (\sqrt{x+a} - \sqrt{x-a}) Y = 2Y = (x+a) - (x-a) = a+a = 2a \rightarrow Y = \frac{a+a}{2}$ $Y-2 = \frac{a+a}{2} - 2 = \boxed{\frac{a}{2}} \checkmark$	(2) 10