1 (4 pts). Simplify the expression $6\sqrt[3]{128m} + 3\sqrt[3]{16m}$. (Your answer can have a $\sqrt[3]{}$ symbol in it, but not any more than necessary.)

Answer:

$$\begin{aligned}
6\sqrt[3]{128m} + 3\sqrt[3]{16m} &= 6\sqrt[3]{64(2m)} + 3\sqrt[3]{8(2m)} \\
&= 6(4)\sqrt[3]{2m} + 3(2)\sqrt[3]{2m} \\
&= 24\sqrt[3]{2m} + 6\sqrt[3]{2m} \\
&= 30\sqrt[3]{2m}
\end{aligned}$$

2 (6 pts). Label each mathematical statement as true (T) or false (F). Assume a and b are positive real numbers.

(a) $\sqrt[3]{a}\sqrt[3]{a} = a$ False, although $\sqrt[3]{a}\sqrt[3]{a}\sqrt[3]{a} = a$

(b) $\sqrt[4]{a} + \sqrt[4]{b} = \sqrt[4]{a+b}$ False, although $\sqrt[4]{ab} = \sqrt[4]{a}\sqrt[4]{b}$

(c) $\sqrt{a^{25}} = a^5$ False. Note that $\sqrt{a^{25}} = (a^{25})^{1/2} = a^{25(1/2)} = a^{12.5}$