Properties of Radicals HW

Simplify the following radicals and circle your final answer. Do not give decimal answers.

1) $\sqrt{24}$

2) $\sqrt[3]{1000}$

3) $\sqrt[3]{-162}$

4) $\sqrt{512}$

5) $\sqrt[4]{128n^8}$

6) $\sqrt{98k}$

7) $\sqrt[5]{224r^7}$

8) $\sqrt[3]{24m^3}$

9) $\sqrt{392x^2}$

10) $\sqrt{512x^2}$

11) $\sqrt[4]{405x^3y^2}$

12) $\sqrt[3]{-16a^3b^8}$

13) $\sqrt[4]{128x^7y^7}$

14) $\sqrt[3]{16xy}$

15) $\sqrt[6]{448x^7y^7}$

16) $\sqrt[3]{56x^5y}$

17) $6\sqrt[3]{192} + 7\sqrt[3]{24} - \sqrt[3]{3}$

18) $4\sqrt{8} - \sqrt{72} + \sqrt{3}$

19) $3\sqrt{12}+\sqrt{3}+2\sqrt{27}$

20) $6\sqrt[3]{24}-\sqrt[3]{81}-2\sqrt[3]{3}$

21) $7\sqrt[70]{8}+5\sqrt[70]{8}-2\sqrt[70]{8}$

22) $4\sqrt{24}+\sqrt{18}-5\sqrt{54}$

23) $\sqrt[3]{108}+\sqrt[3]{32}$

24) An automotive engineer is trying to design a safer car. The maximum force a road can exert on the tires of the car being designed is 2000 pounds. What is the maximum velocity in ft/s at which the car can safely round a turn of radius 320 feet? Use the formula $V=\sqrt{\frac{F_c r}{100}}$, where F_c is the force the road exerts on the car and r is the radius of the turn.