

Simplify. Use absolute value signs when necessary.

$$1. \sqrt[2]{24} = \boxed{2\sqrt{6}}$$

$\begin{matrix} \wedge \\ 6 \uparrow \\ \wedge \\ 2 \quad 2 \end{matrix}$

$$2. \sqrt[3]{1000} = \boxed{10}$$

$$3. \sqrt[3]{-162} = \boxed{-3\sqrt[3]{6}}$$

$$4. \sqrt{512} = \boxed{16\sqrt{2}}$$

$$5. \sqrt[4]{128n^8} = \boxed{2n^2\sqrt[4]{8}}$$

$$6. \sqrt{98k} = \boxed{7\sqrt{2k}}$$

$$7. \sqrt[3]{224r^7} = \boxed{2r\sqrt[3]{7r^2}}$$

$$8. \sqrt[3]{24m^3} = \boxed{2m\sqrt[3]{3}}$$

$$9. \sqrt{392x^2} = \boxed{14x\sqrt{2}}$$

$$10. \sqrt{512x^2} = \boxed{16x\sqrt{2}}$$

$$11. \sqrt[3]{405x^3y^2} = \boxed{3\sqrt[3]{5x^3y^2}}$$

$$12. \sqrt[3]{-16a^3b^8} = \boxed{-2ab^2\sqrt[3]{2b^2}}$$

$$13. \sqrt[3]{128x^7y^3} = \boxed{2xy\sqrt[3]{8x^3y^3}}$$

$$14. \sqrt[3]{16xy} = \boxed{2\sqrt[3]{2xy}}$$

Evaluate.

16. $\sqrt{28}$

$2\sqrt{7}$

17. $\sqrt[3]{-27}$

-3

18. $\sqrt[3]{64}$

$2\sqrt[3]{2}$

19. $\sqrt[4]{243v^6}$

$3\sqrt[4]{3v^2}$

20. $\sqrt[3]{5^3}$

5

Simplify.

21. $\sqrt{8x^4}$

$2x^2\sqrt{2}$

22. $\sqrt[3]{64m^7n}$

$4m^2\sqrt[3]{mn}$

23. $\sqrt[5]{-32x^6y^{10}z}$

$-2xy^2\sqrt[5]{xz}$

24. $\sqrt[6]{448x^7y^8}$

$2xy\sqrt[6]{7xy^2}$

Evaluate without a calculator. Write in radical form, then simplify.

25. $9^{\frac{1}{2}}$

3

26. $16^{\frac{3}{4}}$

8

27. $8^{\frac{1}{3}}$

$\sqrt[3]{2}$

28. $32^{\frac{2}{5}}$

4

29. $27^{\frac{4}{3}}$

$\sqrt[3]{81}$

Simplify. Rationalize the denominator if needed.

30. $\frac{7}{\sqrt{13}}$

$\frac{7\sqrt{13}}{13}$

31. $\sqrt{5}(\sqrt{4} + \sqrt{3})$

$2\sqrt{5} + \sqrt{15}$

32. $6\sqrt{20} + 4\sqrt[3]{6} - 7\sqrt{45}$

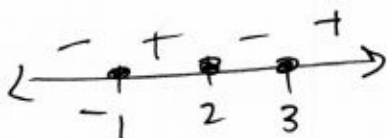
$-9\sqrt{5} + 4\sqrt[3]{6}$

Review

Solve the following polynomial inequalities

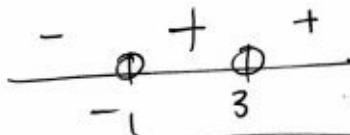
1. $(x+1)(x^2 - 5x + 6) \leq 0$

$(x+1)(x-2)(x-3)$



$(-\infty, -1] \cup [2, 3]$

2. $(x+1)(x-3)^2 > 0$



$(-1, 3) \cup (3, \infty)$