Review exponent rules, rewrite rad/expo, solve rad/expl equations

Simplify. Your answer should contain only positive exponents.

1) $2k^{-4} \cdot 3k^{3}$

2) $\left(b^{4}b^{-3}\right)^{-2}$

3) $(3b)^{3}$

4) $\left(\dfrac{2a^{4}}{a^{-2}}\right)^{2}$

5) $\dfrac{3n^{3}}{n^{3}}$

6) $\dfrac{x^{4}}{2x^{3} \cdot 3x}$

7) $\dfrac{2n^{0} \cdot 4n^{2}}{4n^{-3}}$

8) $\left(r^{3}\right)^{2} \cdot r^{-2}$

9) $\dfrac{a^{-2}}{3a \cdot 2a^{4}}$

10) $\dfrac{n^{3}}{n^{-2} \cdot \left(2n^{2}\right)^{2}}$

Write each expression in exponential form.

11) $\left(\sqrt[3]{7v}\right)^{4}$

12) $\left(\sqrt[3]{6a}\right)^{2}$

13) $\sqrt{7p}$

14) $\left(\sqrt[3]{4r}\right)^{4}$

15) $\dfrac{1}{\left(\sqrt[4]{3x}\right)^{7}}$

16) $\sqrt{a}$

17) $\left(\sqrt[3]{3x}\right)^{2}$

18) $\left(\sqrt{7m}\right)^{3}$

Write each expression in radical form.

19) $(4x)^{\frac{4}{3}}$

20) $(7v)^{\frac{1}{3}}$

21) $r^{\frac{1}{2}}$

22) $(2r)^{-\frac{1}{4}}$

23) $(10n)^{\frac{5}{4}}$

24) $(5p)^{-\frac{5}{4}}$

25) $m^{\frac{5}{3}}$

26) $(10r)^{\frac{5}{6}}$

Solve each equation. Remember to check for extraneous solutions.

27) $0 = \sqrt{\frac{v}{4}}$

28) $(9p)^{\frac{1}{2}} = 3$

29) $b^{\frac{1}{2}} = (2b - 3)^{\frac{1}{2}}$

30) $\sqrt{3 - x} = \sqrt{x - 1}$

31) $\sqrt{2 - n} = n$

32) $m = (3m)^{\frac{1}{2}}$

33) $x - 3 = (x - 1)^{\frac{1}{2}}$

34) $p = 1 + \sqrt{7 - 3p}$

35) $\sqrt{-3 - x} = \sqrt{-12 - 2x}$

36) $(4n)^{\frac{1}{2}} = (3n + 2)^{\frac{1}{2}}$

37) $\sqrt{-1 - b} = 2$

38) $\sqrt{2m + 13} = \sqrt{-5 - m}$