Algebra 2 Rational Exponent Practice

HW #22: SHOW ALL WORK on the worksheet

Simplify

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

2) $2u^{-2}v^{-2} \cdot \left(2uv^4\right)^{-2}$

3) $\dfrac{\left(x^4 y^2 z^2\right)^2}{z \cdot 2y^3 z^3}$

4) $x^2 \cdot x^{\frac{1}{2}} x^{\frac{7}{4}}$

5) $x^2 y^{\frac{1}{2}} \cdot \left(x^{\frac{5}{4}}\right)^2$

6) $\left(b^4\right)^{\frac{3}{4}} \cdot ab^0 \cdot ab^2$

7) $\left(x^{\frac{3}{4}} y^{\frac{3}{2}} \cdot x^{\frac{7}{4}} y^0\right)^{\frac{5}{3}}$

8) $y^{\frac{7}{4}} \cdot x^2 y^{\frac{2}{3}} \cdot \left(x^3 y^2\right)^{\frac{3}{2}}$

9) $2^{\frac{1}{2}} \cdot 16^{\frac{4}{3}}$

10) $\left(\dfrac{w^{15}}{x^{10}}\right)^{-\frac{4}{5}}$

11) $\left(25a^{10}b^{16}\right)^{\frac{1}{2}}$

12) $\left(x^{4y}\right)^{\frac{1}{2}} + \left(xy^{\frac{1}{4}}\right)^2$

13) $\left(3x^{\frac{3}{2}}\right)^2 - \left(2x^{\frac{1}{2}}\right)^6$

14) $\left(y^{\frac{2}{3}}y^{\frac{5}{6}}\right)^{-6}$

15) $\dfrac{120^{-\frac{2}{5}} \cdot 120^{\frac{2}{5}}}{7^{-\frac{3}{4}}}$

16) $\left(a^{-6}b^{12}\right)^{\frac{2}{3}}$
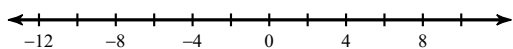
Solve each equation.

17) $9 + |a - 2| = -2$
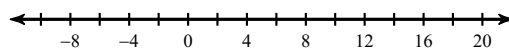
18) $5|a + 6| - 6 = 19$

19) $7 + 9|-8p - 9| = 16$

20) $-5 + 6|-8k - 1| = 49$
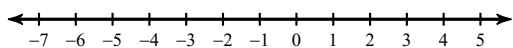
Solve each inequality and graph its solution.

21) $-|3 - 9n| - 3 > -87$

22) $-4 + 9|5 - k| \geq 95$

23) $2 - |10 + 6m| \geq -8$

24) $4|5r - 4| + 4 > 88$