

SM2a HW #3-4 (Rational Exponents)

Date _____ Period _____

Simplify.

1) $(9k^2)^{\frac{3}{2}}$

2) $(k^4)^{\frac{1}{2}}$

3) $(x^6)^{\frac{3}{2}}$

4) $(b^{12})^{-\frac{5}{4}}$

5) $3x^2 \cdot 3x^{\frac{3}{4}}y^{\frac{2}{3}}$

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

Write each expression in radical form.

7) $(5v)^{\frac{1}{2}}$

8) $3m^{\frac{7}{6}}$

Write each expression in exponential form.

9) $(\sqrt{x})^5$

10) $\sqrt[3]{5x}$

Simplify.

11) $\left(uv^{\frac{1}{4}}\right)^{\frac{1}{2}}$

12) $\left(x^{\frac{2}{3}}y^2\right)^2$

13) $4n^{\frac{5}{3}} \cdot 4n^2$

14) $4x^2 \cdot x^{\frac{1}{2}} \cdot x^{\frac{4}{3}}$

Factor each completely.

15) $5m^3 - 10m^2 - 75m$

16) $3r^2 + 3r - 18$