Exponents work sheet

By Ms. Nooch

Name _____ Class _____ No. _____

1. Which of the following is equivalent to $a^{\frac{4}{7}}$?

   A. $\sqrt[7]{a^4}$

   B. $\sqrt[7]{a^5}$

   C. $a\sqrt[7]{a}$

   D. $a\sqrt[7]{a^4}$

2. Which of the following is equivalent to $4^{\frac{5}{4}}$?

   A. $\sqrt[4]{4}$

   B. $\sqrt[5]{4^4}$

   C. $2\sqrt{2}$

   D. $4\sqrt{2}$

$$(\sqrt{x})^{\frac{1}{2}} \cdot x^{\frac{5}{4}}$$

3. Which of the following is equivalent to the expression shown above?

   A. $\sqrt[3]{x^2}$

   B. $\sqrt[3]{x}$

   C. $\sqrt{x^3}$

   D. $\sqrt[4]{x^7}$

4. The expression $\dfrac{a^{-1}b^{\frac{1}{2}}}{a^{-\frac{1}{3}}b^{-2}}$ where a > 1 and b > 1, is equivalent to which of the following?

   A. $\dfrac{b}{\sqrt[3]{a^2}}$

   B. $\dfrac{b\sqrt{b}}{\sqrt[3]{a^2}}$

   C. $\dfrac{b^2}{\sqrt[3]{a^2}}$

   D. $\dfrac{b^2\sqrt{b}}{\sqrt[3]{a^2}}$

5. If $a \cdot a^{\frac{1}{2}} = 27$, what is the value of a ?

   A. 3

   B. 9

   C. 27

   D. 81