

**DAV Public School**  
**Pokhariput, Bhubaneswar**  
**Subject – Mathematics, Class VIII**  
**Chapter 3: Exponents and Radicals**  
**Worksheet (Standard)**

1. Express each of the following numbers as a product of powers of their prime factors:
  - a) 392
  - b) 864

1
  
2. Choose the correct option:
  - a)  $3^4 \times 6^2 = 18^6$
  - b)  $4^0 = 0$
  - c)  $5^2 > 2^5$
  - d)  $(a^x)^y = a^{xy}$

1
  
3. What power of (-3) is 729?
 

2
  
4. If  $2^4 + 3^2 = 5^x$ , then find x.
 

2
  
5. Convert the following exponential forms to radical forms:
  - a)  $(\frac{45}{8})^{2/9}$
  - b)  $(253)^{7/5}$

2
  
6. Simplify and write the answer in exponential form:
  - a)  $(4^2)^3 \div 4^4$
  - b)  $(5^5 \div 5^3) \times 5^1$
  - c)  $10^0 \times 6^0$

3
  
7. Find the value of the following:
  - (a)  $(-1/4)^3$
  - (b)  $(-2/7)^2$
  - (c)  $3^4 \times (-1)^{173}$

3
  
8. Find the value:
  - a)  $(\frac{64}{1331})^{2/3}$
  - b)  $\sqrt[3]{125^2}$
  - c)  $\sqrt[2]{36^3}$

3
  
9. Simplify:  $\frac{(64)^{\frac{-1}{6}} \times (216)^{\frac{-1}{3}} \times (81)^{\frac{1}{4}}}{(512)^{\frac{-1}{3}} \times (16)^{\frac{1}{4}} \times (9)^{\frac{-1}{2}}}$ 

4
  
10. Simplify and express the answer with positive indices:  $\left[ \sqrt[3]{x^4 y} \times \frac{1}{\sqrt[3]{xy^7}} \right]^{-4}$ 

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