

## Worksheet #8—Basic Arithmetic Fractional Exponent Problems

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Simplify each of the following. Leave no exponents in your final answer.

(1)  $9^{-2}$

(4)  $27^{-1/3}$

(7)  $16^{1/2}$

(10)  $\left(\frac{4}{9}\right)^{-2}$

(13)  $5^0$

(16)  $1^{-2}$

(19)  $\left(-\left(\frac{1}{8}\right)\right)^{-2}$

(22)  $4^{-5/2}$

(25)  $8^{-2}$

(28)  $64^{1/6}$

(31)  $16^{1/4}$

(34)  $64^{2/3}$

(37)  $\left(\frac{1}{2}\right)^3$

(40)  $\left(\frac{2}{3}\right)^{-2}$

(43)  $(-9)^{-1}$

(46)  $(-8)^{-3}$

(49)  $125^{-2/3}$

(52)  $64^{-1/2}$

(2)  $8^{2/3}$

(5)  $\left(\frac{1}{2}\right)^{-2}$

(8)  $\left(\frac{4}{81}\right)^{3/2}$

(11)  $(-8)^{2/3}$

(14)  $16^{-3/4}$

(17)  $-\left(\frac{1}{8}\right)^{-1}$

(20)  $\left(\frac{9}{16}\right)^{1/2}$

(23)  $144^{1/2}$

(26)  $4^{-3/2}$

(29)  $100^{-1/2}$

(32)  $8^{2/3}$

(35)  $\left(\frac{1}{9}\right)^{-3/2}$

(38)  $(-8)^{-1/3}$

(41)  $\left(\frac{1}{4}\right)^{1/2}$

(44)  $64^{3/2}$

(47)  $3^{-1} 5^{-2}$

(50)  $36^{-3/2}$

(53)  $4^{1/2} 8^{1/3}$

(3)  $32^{2/5}$

(6)  $(-32)^{-3/5}$

(9)  $\left(\frac{2}{3}\right)^2$

(12)  $\left(\frac{1}{64}\right)^{-2/3}$

(15)  $4^{-2}$

(18)  $\left(-\left(\frac{1}{8}\right)\right)^{-1}$

(21)  $\left(\frac{8}{27}\right)^{-2/3}$

(24)  $27^{1/3}$

(27)  $25^{3/2}$

(30)  $64^{1/3}$

(33)  $4^{-1/2}$

(36)  $4^{1/2} + 9^{-1/2}$

(39)  $\left(\frac{4}{9}\right)^{3/2}$

(42)  $27^{-1/3}$

(45)  $32^{1/5}$

(48)  $64^{1/3}$

(51)  $32^{-2/5}$

(54)  $\left(\frac{2}{5}\right)^0$