

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