Negative and Fractional Exponents

MATH MONKS

Evaluate the following.

1. $(3)^{-\frac{1}{2}}$

2. $(8)^{-\frac{2}{3}}$

3. $(8)^{-\frac{1}{3}}$

4. $(27)^{-\frac{1}{3}}$

5. $(p^3q^2)^{-\frac{4}{5}}$

6. $(4)^{-\frac{3}{2}}$

7. $3mn^{\frac{1}{2}} . 4m^{-\frac{4}{3}}n^{\frac{1}{2}}$

8. $\left(p^{-\frac{5}{6}}\right)^{-\frac{3}{4}}$

9. $1000000^{-\frac{3}{6}}$

10. $\left(\frac{a^2 . ab^{\frac{1}{4}}}{a^{\frac{3}{2}}}\right)^{-\frac{3}{2}}$

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Answers

1 $(3)^{-\frac{1}{2}}$

$= \frac{1}{3^{\frac{1}{2}}} = 0.57$

2 $(8)^{-\frac{2}{3}}$

$= \frac{1}{4} = 0.25$

3 $(8)^{-\frac{1}{3}}$

$= \frac{1}{2} = 0.5$

4 $(27)^{-\frac{1}{3}}$

$= \frac{1}{3} = 0.33$

5 $(p^3q^2)^{-\frac{4}{5}}$

$= p^{-\frac{12}{5}} . q^{-\frac{8}{5}}$

6 $(4)^{-\frac{3}{2}}$

$= \frac{1}{2^3} = 0.125$

7 $3mn^{\frac{1}{2}} . 4m^{-\frac{4}{3}}n^{\frac{1}{2}}$

$= 12m^{-\frac{1}{3}}n$

8 $\left(p^{-\frac{5}{6}}\right)^{-\frac{3}{4}}$

$= p^{\frac{5}{8}}$

9 $1000000^{-\frac{3}{6}}$

$= \frac{1}{1000000^{\frac{1}{2}}} = 0.001$

10 $\left(\frac{a^2 . ab^{\frac{1}{4}}}{a^{\frac{3}{2}}}\right)^{-\frac{3}{2}}$

$= a^{-\frac{9}{4}} b^{-\frac{3}{8}}$