Mobius Math Club Name:_____

Math worksheet on *'Exponents - Negative Fractiona Exponents with Square Integer Base - Exponent to Factored Exponent (Level 2)'*. Part of a broader unit o *'Exponents - Fractional Bases and Exponents - Practice'*

Learn online:

app.mobius.academy/math/units/exponents_fractional_bases_and_exponents_practi

1 Factor the base number and simplify to make it easier to solve

$81^{\left(\frac{-1}{4}\right)}$

a $\frac{1}{(3 \cdot 3 \cdot 3)^{\left(\frac{1}{4}\right)}}$

b $\frac{1}{(3 \cdot 3 \cdot 3 \cdot 3 \cdot 11)^{\left(\frac{1}{4}\right)}}$

c $\frac{1}{(3 \cdot 3 \cdot 9)^{\left(\frac{1}{4}\right)}}$

d $\frac{1}{(3 \cdot 9 \cdot 3)^{\left(\frac{1}{4}\right)}}$

e $\frac{1}{(3 \cdot 3 \cdot 3 \cdot 3 \cdot 5)^{\left(\frac{1}{4}\right)}}$

f $\frac{1}{(3 \cdot 3 \cdot 3 \cdot 3)^{\left(\frac{1}{4}\right)}}$

2 Factor the base number and simplify to make it easier to solve

$16^{\left(\frac{-1}{4}\right)}$

a $\frac{1}{(2 \cdot 2 \cdot 2 \cdot 2 \cdot 2)^{\left(\frac{1}{4}\right)}}$

b $\frac{1}{(2 \cdot 4 \cdot 2)^{\left(\frac{1}{4}\right)}}$

c $\frac{1}{(2 \cdot 2 \cdot 4)^{\left(\frac{1}{4}\right)}}$

d $\frac{1}{(2 \cdot 2 \cdot 2 \cdot 2)^{\left(\frac{1}{4}\right)}}$

e $\frac{1}{(2 \cdot 2 \cdot 2 \cdot 2 \cdot 5)^{\left(\frac{1}{4}\right)}}$

f $\frac{1}{(2 \cdot 2 \cdot 2)^{\left(\frac{1}{4}\right)}}$

3 Factor the base number and simplify to make it easier to solve

$216^{\left(\frac{-1}{3}\right)}$

a $\frac{1}{(2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 11)^{\left(\frac{1}{3}\right)}}$

b $\frac{1}{(2 \cdot 2 \cdot 2 \cdot 9 \cdot 3)^{\left(\frac{1}{3}\right)}}$

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

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

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

f $\frac{1}{(2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 13)^{\left(\frac{1}{3}\right)}}$

4 Factor the base number and simplify to make it easier to solve

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

a $\frac{1}{(2 \cdot 2 \cdot 13)^{\left(\frac{1}{2}\right)}}$

b $\frac{1}{(2 \cdot 2 \cdot 2)^{\left(\frac{1}{2}\right)}}$

c $\frac{1}{(2 \cdot 2)^{\left(\frac{1}{2}\right)}}$

d $\frac{1}{(2 \cdot 2 \cdot 7)^{\left(\frac{1}{2}\right)}}$

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

f $\frac{1}{(2 \cdot 2 \cdot 11)^{\left(\frac{1}{2}\right)}}$

5 Factor the base number and simplify to make it easier to solve

$125^{\left(\frac{-1}{3}\right)}$

a $\frac{1}{(5 \cdot 5 \cdot 5 \cdot 11)^{\left(\frac{1}{3}\right)}}$

b $\frac{1}{(5 \cdot 5 \cdot 5 \cdot 7)^{\left(\frac{1}{3}\right)}}$

c $\frac{1}{(5 \cdot 5 \cdot 5)^{\left(\frac{1}{3}\right)}}$

d $\frac{1}{(5 \cdot 5 \cdot 5 \cdot 5)^{\left(\frac{1}{3}\right)}}$

e $\frac{1}{(2 \cdot 5 \cdot 5 \cdot 5)^{\left(\frac{1}{3}\right)}}$

f $\frac{1}{(3 \cdot 5 \cdot 5 \cdot 5)^{\left(\frac{1}{3}\right)}}$

6 Factor the base number and simplify to make it easier to solve

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

a $\frac{1}{(2 \cdot 2 \cdot 4 \cdot 2 \cdot 2)^{\left(\frac{1}{3}\right)}}$

b $\frac{1}{(2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 13)^{\left(\frac{1}{3}\right)}}$

c $\frac{1}{(2 \cdot 2 \cdot 2 \cdot 2 \cdot 4)^{\left(\frac{1}{3}\right)}}$

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

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

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

7 Factor the base number and simplify to make it easier to solve

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

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

b $\frac{1}{(3 \cdot 3 \cdot 7)^{\left(\frac{1}{2}\right)}}$

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

d $\frac{1}{(3 \cdot 3 \cdot 5)^{\left(\frac{1}{2}\right)}}$

e $\frac{1}{(3 \cdot 3 \cdot 11)^{\left(\frac{1}{2}\right)}}$

f $\frac{1}{(3 \cdot 3 \cdot 13)^{\left(\frac{1}{2}\right)}}$