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Math worksheet on *'Exponents - Fractional Exponents with Non-Square Integer Base - Exponent to Factored Radical (Level 1)'*. Part of a broader unit on *'Exponents - Fractional Bases and Exponents - Intro'*

Learn online:

app.mobius.academy/math/units/exponents_fractional_bases_and_exponents_intro/

1 Factor this exponent's base number and express it as a radical

$50^{\left(\frac{1}{2}\right)}$

a $\sqrt{2 \cdot 5 \cdot 5 \cdot 13}$	**b** $\sqrt{2 \cdot 5 \cdot 5 \cdot 11}$
c $\sqrt{2 \cdot 5 \cdot 5}$	**d** $\sqrt{2 \cdot 2 \cdot 5 \cdot 5}$
e $\sqrt{2 \cdot 5 \cdot 5 \cdot 7}$	**f** $\sqrt{2 \cdot 3 \cdot 5 \cdot 5}$

2 Factor this exponent's base number and express it as a radical

$108^{\left(\frac{1}{2}\right)}$

a $\sqrt{2 \cdot 2 \cdot 3 \cdot 3 \cdot 3}$	
b $\sqrt{2 \cdot 2 \cdot 3 \cdot 9}$	
c $\sqrt{2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 13}$	
d $\sqrt{2 \cdot 2 \cdot 9 \cdot 3}$	
e $\sqrt{2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 5}$	
f $\sqrt{2 \cdot 2 \cdot 3 \cdot 3}$	

3 Factor this exponent's base number and express it as a radical

$45^{\left(\frac{1}{2}\right)}$

a $\sqrt{3 \cdot 3 \cdot 5}$	**b** $\sqrt{3 \cdot 3 \cdot 3 \cdot 5}$
c $\sqrt{3 \cdot 3 \cdot 5 \cdot 11}$	**d** $\sqrt{3 \cdot 3 \cdot 5 \cdot 5}$
e $\sqrt{3 \cdot 3 \cdot 5 \cdot 7}$	**f** $\sqrt{2 \cdot 3 \cdot 3 \cdot 5}$

4 Factor this exponent's base number and express it as a radical

$80^{\left(\frac{1}{2}\right)}$

a $\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 5}$	
b $\sqrt{2 \cdot 4 \cdot 2 \cdot 5}$	
c $\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 5}$	
d $\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 5 \cdot 11}$	
e $\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5}$	
f $\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 5 \cdot 5}$	

5 Factor this exponent's base number and express it as a radical

$72^{\left(\frac{1}{2}\right)}$

a $\sqrt{2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 13}$	
b $\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3}$	
c $\sqrt{2 \cdot 2 \cdot 3 \cdot 3}$	
d $\sqrt{2 \cdot 2 \cdot 2 \cdot 3 \cdot 3}$	
e $\sqrt{2 \cdot 2 \cdot 6 \cdot 3}$	
f $\sqrt{2 \cdot 2 \cdot 2 \cdot 9}$	

6 Factor this exponent's base number and express it as a radical

$18^{\left(\frac{1}{2}\right)}$

a $\sqrt{2 \cdot 3 \cdot 3 \cdot 7}$	**b** $\sqrt{2 \cdot 3 \cdot 3 \cdot 11}$
c $\sqrt{2 \cdot 2 \cdot 3 \cdot 3}$	**d** $\sqrt{2 \cdot 3 \cdot 3 \cdot 5}$
e $\sqrt{2 \cdot 3 \cdot 3 \cdot 3}$	**f** $\sqrt{2 \cdot 3 \cdot 3}$

7 Factor this exponent's base number and express it as a radical

$75^{\left(\frac{1}{2}\right)}$

a $\sqrt{3 \cdot 3 \cdot 5 \cdot 5}$	**b** $\sqrt{3 \cdot 5 \cdot 5}$
c $\sqrt{3 \cdot 5 \cdot 5 \cdot 7}$	**d** $\sqrt{3 \cdot 5 \cdot 5 \cdot 13}$
e $\sqrt{2 \cdot 3 \cdot 5 \cdot 5}$	**f** $\sqrt{3 \cdot 5 \cdot 5 \cdot 11}$