mobius

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

Learn online:

app.mobius.academy/math/units/exponents_negative_and_fractional_bases_review/

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

$12^{\left(\frac{1}{2}\right)}$

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

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

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

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

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

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

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

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

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

a $\sqrt{2 \cdot 4 \cdot 2}$	**b** $\sqrt{2 \cdot 2 \cdot 2}$
c $\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}$	**d** $\sqrt{2 \cdot 2 \cdot 2 \cdot 2}$
e $\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 7}$	**f** $\sqrt{2 \cdot 2 \cdot 4}$

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

$24^{\left(\frac{1}{3}\right)}$

a $\sqrt[3]{2 \cdot 2 \cdot 6}$	**b** $\sqrt[3]{2 \cdot 2 \cdot 2}$
c $\sqrt[3]{2 \cdot 2 \cdot 3}$	**d** $\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 3}$
e $\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 3}$	**f** $\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 3 \cdot 11}$

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

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

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

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

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

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