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

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

$108^{\left(\frac{-1}{3}\right)}$

a $\frac{1}{\sqrt[3]{2 \cdot 3 \cdot 3 \cdot 3}}$ **b** $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3}}$

c $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 5}}$ **d** $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 3 \cdot 3 \cdot 3}}$

e $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 3 \cdot 9}}$ **f** $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 11}}$

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

$135^{\left(\frac{-1}{3}\right)}$

a $\frac{1}{\sqrt[3]{3 \cdot 3 \cdot 3 \cdot 5}}$ **b** $\frac{1}{\sqrt[3]{3 \cdot 9 \cdot 5}}$

c $\frac{1}{\sqrt[3]{3 \cdot 3 \cdot 5}}$ **d** $\frac{1}{\sqrt[3]{3 \cdot 3 \cdot 3 \cdot 5 \cdot 7}}$

e $\frac{1}{\sqrt[3]{3 \cdot 3 \cdot 15}}$ **f** $\frac{1}{\sqrt[3]{2 \cdot 3 \cdot 3 \cdot 3 \cdot 5}}$

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

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

a $\frac{1}{\sqrt{2 \cdot 3 \cdot 3 \cdot 11}}$ **b** $\frac{1}{\sqrt{2 \cdot 3 \cdot 3}}$

c $\frac{1}{\sqrt{2 \cdot 3 \cdot 3 \cdot 5}}$ **d** $\frac{1}{\sqrt{2 \cdot 3 \cdot 3 \cdot 13}}$

e $\frac{1}{\sqrt{2 \cdot 3 \cdot 3 \cdot 7}}$ **f** $\frac{1}{\sqrt{2 \cdot 3 \cdot 3 \cdot 3}}$

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

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

a $\frac{1}{\sqrt{2 \cdot 2 \cdot 3 \cdot 13}}$ **b** $\frac{1}{\sqrt{2 \cdot 2 \cdot 3 \cdot 3}}$

c $\frac{1}{\sqrt{2 \cdot 2 \cdot 3 \cdot 5}}$ **d** $\frac{1}{\sqrt{2 \cdot 2 \cdot 3}}$

e $\frac{1}{\sqrt{2 \cdot 2 \cdot 3 \cdot 11}}$ **f** $\frac{1}{\sqrt{2 \cdot 2 \cdot 2 \cdot 3}}$

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

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

a $\frac{1}{\sqrt{2 \cdot 5 \cdot 5 \cdot 13}}$ **b** $\frac{1}{\sqrt{2 \cdot 5 \cdot 5}}$

c $\frac{1}{\sqrt{2 \cdot 5 \cdot 5 \cdot 11}}$ **d** $\frac{1}{\sqrt{2 \cdot 5 \cdot 5 \cdot 7}}$

e $\frac{1}{\sqrt{2 \cdot 5 \cdot 5 \cdot 5}}$ **f** $\frac{1}{\sqrt{2 \cdot 2 \cdot 5 \cdot 5}}$

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

$150^{\left(\frac{-1}{2}\right)}$

a $\frac{1}{\sqrt{2 \cdot 5 \cdot 5}}$ **b** $\frac{1}{\sqrt{2 \cdot 15 \cdot 5}}$

c $\frac{1}{\sqrt{2 \cdot 3 \cdot 25}}$ **d** $\frac{1}{\sqrt{2 \cdot 3 \cdot 5 \cdot 5 \cdot 7}}$

e $\frac{1}{\sqrt{2 \cdot 3 \cdot 5 \cdot 5}}$ **f** $\frac{1}{\sqrt{3 \cdot 5 \cdot 5}}$

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

$32^{\left(\frac{-1}{3}\right)}$

a $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}}$ **b** $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 7}}$

c $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 4}}$ **d** $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 4 \cdot 2}}$

e $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2}}$ **f** $\frac{1}{\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}}$