



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

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1 Factor the base number to make it easier to solve

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

- a** $(3 \cdot 3 \cdot 3 \cdot 3 \cdot 13)^{\left(\frac{1}{4}\right)}$
- b** $(3 \cdot 3 \cdot 9)^{\left(\frac{1}{4}\right)}$
- c** $(3 \cdot 3 \cdot 3 \cdot 3)^{\left(\frac{1}{4}\right)}$
- d** $(3 \cdot 3 \cdot 3 \cdot 3 \cdot 5)^{\left(\frac{1}{4}\right)}$
- e** $(3 \cdot 3 \cdot 3 \cdot 3 \cdot 7)^{\left(\frac{1}{4}\right)}$
- f** $(3 \cdot 3 \cdot 3)^{\left(\frac{1}{4}\right)}$

2 Factor the base number to make it easier to solve

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

- a** $(2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 13)^{\left(\frac{1}{3}\right)}$
- b** $(2 \cdot 2 \cdot 3 \cdot 3 \cdot 3)^{\left(\frac{1}{3}\right)}$
- c** $(2 \cdot 4 \cdot 3 \cdot 3 \cdot 3)^{\left(\frac{1}{3}\right)}$
- d** $(2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3)^{\left(\frac{1}{3}\right)}$
- e** $(2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3)^{\left(\frac{1}{3}\right)}$
- f** $(2 \cdot 2 \cdot 2 \cdot 9 \cdot 3)^{\left(\frac{1}{3}\right)}$

3 Factor the base number to make it easier to solve

$$27^{\left(\frac{1}{3}\right)}$$

- a** $(3 \cdot 3 \cdot 3 \cdot 3)^{\left(\frac{1}{3}\right)}$
- b** $(3 \cdot 3 \cdot 3 \cdot 7)^{\left(\frac{1}{3}\right)}$
- c** $(3 \cdot 3 \cdot 3 \cdot 13)^{\left(\frac{1}{3}\right)}$
- d** $(3 \cdot 3 \cdot 3 \cdot 11)^{\left(\frac{1}{3}\right)}$
- e** $(2 \cdot 3 \cdot 3 \cdot 3)^{\left(\frac{1}{3}\right)}$
- f** $(3 \cdot 3 \cdot 3)^{\left(\frac{1}{3}\right)}$

4 Factor the base number to make it easier to solve

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

- a** $(5 \cdot 5 \cdot 5 \cdot 5)^{\left(\frac{1}{3}\right)}$
- b** $(3 \cdot 5 \cdot 5 \cdot 5)^{\left(\frac{1}{3}\right)}$
- c** $(5 \cdot 5 \cdot 5)^{\left(\frac{1}{3}\right)}$
- d** $(5 \cdot 5 \cdot 5 \cdot 13)^{\left(\frac{1}{3}\right)}$
- e** $(2 \cdot 5 \cdot 5 \cdot 5)^{\left(\frac{1}{3}\right)}$
- f** $(5 \cdot 5 \cdot 5 \cdot 7)^{\left(\frac{1}{3}\right)}$

5 Factor the base number to make it easier to solve

$$32^{\left(\frac{1}{5}\right)}$$

- a** $(2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2)^{\left(\frac{1}{5}\right)}$
- b** $(2 \cdot 2 \cdot 2 \cdot 4)^{\left(\frac{1}{5}\right)}$
- c** $(2 \cdot 2 \cdot 2 \cdot 2)^{\left(\frac{1}{5}\right)}$
- d** $(2 \cdot 2 \cdot 4 \cdot 2)^{\left(\frac{1}{5}\right)}$
- e** $(2 \cdot 4 \cdot 2 \cdot 2)^{\left(\frac{1}{5}\right)}$
- f** $(2 \cdot 2 \cdot 2 \cdot 2 \cdot 2)^{\left(\frac{1}{5}\right)}$

6 Factor the base number to make it easier to solve

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

- a** $(3 \cdot 3 \cdot 13)^{\left(\frac{1}{2}\right)}$
- b** $(3 \cdot 3 \cdot 7)^{\left(\frac{1}{2}\right)}$
- c** $(3 \cdot 3 \cdot 3)^{\left(\frac{1}{2}\right)}$
- d** $(3 \cdot 3)^{\left(\frac{1}{2}\right)}$
- e** $(3 \cdot 3 \cdot 5)^{\left(\frac{1}{2}\right)}$
- f** $(3 \cdot 3 \cdot 11)^{\left(\frac{1}{2}\right)}$

7 Factor the base number to make it easier to solve

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

- a** $(2 \cdot 2 \cdot 2 \cdot 2)^{\left(\frac{1}{2}\right)}$
- b** $(2 \cdot 2 \cdot 2 \cdot 2 \cdot 13)^{\left(\frac{1}{2}\right)}$
- c** $(2 \cdot 2 \cdot 2)^{\left(\frac{1}{2}\right)}$
- d** $(2 \cdot 2 \cdot 2 \cdot 2 \cdot 2)^{\left(\frac{1}{2}\right)}$
- e** $(2 \cdot 2 \cdot 4)^{\left(\frac{1}{2}\right)}$
- f** $(2 \cdot 2 \cdot 2 \cdot 2 \cdot 5)^{\left(\frac{1}{2}\right)}$