



Math worksheet on 'Radicals - Convert Cube Root, Values and Variables, from Exponents - Negative (Level 1)'. Part of a broader unit on 'Radicals - Simplifying Practice'

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**1** Convert the fractional exponent to a radical

|                                     |                                    |                                     |
|-------------------------------------|------------------------------------|-------------------------------------|
| <b>a</b> $\frac{1}{\sqrt[3]{b}}$    | <b>b</b> $\frac{1}{\sqrt[3]{b^2}}$ | <b>c</b> $\frac{1}{\sqrt[3]{4b^2}}$ |
| <b>d</b> $\frac{1}{\sqrt[3]{3b^2}}$ | <b>e</b> $\frac{1}{\sqrt[3]{4b}}$  | <b>f</b> $\frac{1}{\sqrt[3]{3b^2}}$ |

$3^{-\frac{1}{3}} \cdot b^{-\frac{2}{3}}$

**2** Convert the fractional exponent to a radical

|                                      |                                      |                                      |
|--------------------------------------|--------------------------------------|--------------------------------------|
| <b>a</b> $\frac{1}{\sqrt[3]{2x}}$    | <b>b</b> $\frac{1}{\sqrt[3]{x}}$     | <b>c</b> $\frac{1}{2\sqrt[3]{x}}$    |
| <b>d</b> $\frac{1}{4\sqrt[3]{4x^2}}$ | <b>e</b> $\frac{1}{2\sqrt[3]{3x^2}}$ | <b>f</b> $\frac{1}{3\sqrt[3]{5x^3}}$ |

$2^{-\frac{1}{3}} \cdot x^{-\frac{1}{3}}$

**3** Convert the fractional exponent to a radical

|                                     |                                      |                                     |
|-------------------------------------|--------------------------------------|-------------------------------------|
| <b>a</b> $\frac{1}{4\sqrt[3]{d^4}}$ | <b>b</b> $\frac{1}{\sqrt[3]{7d^3}}$  | <b>c</b> $\frac{1}{\sqrt[3]{5d^2}}$ |
| <b>d</b> $\frac{1}{\sqrt[3]{3d^2}}$ | <b>e</b> $\frac{1}{3\sqrt[3]{5d^2}}$ | <b>f</b> $\frac{1}{2\sqrt[3]{8d}}$  |

$5^{-\frac{1}{3}} \cdot d^{-\frac{2}{3}}$

**4** Convert the fractional exponent to a radical

|                                    |                                   |                                   |
|------------------------------------|-----------------------------------|-----------------------------------|
| <b>a</b> $\frac{1}{\sqrt[3]{2b}}$  | <b>b</b> $\frac{1}{2\sqrt[3]{b}}$ | <b>c</b> $\frac{1}{\sqrt[3]{5b}}$ |
| <b>d</b> $\frac{1}{2\sqrt[3]{2b}}$ | <b>e</b> $\frac{1}{\sqrt[3]{b}}$  | <b>f</b> $\frac{1}{\sqrt[3]{4b}}$ |

$2^{-\frac{1}{3}} \cdot b^{-\frac{1}{3}}$

**5** Convert the fractional exponent to a radical

$11^{-\frac{1}{3}} \cdot n^{-\frac{2}{3}}$

|                                    |                                       |                                     |                                   |                                      |                                    |
|------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------|--------------------------------------|------------------------------------|
| <b>a</b> $\frac{1}{\sqrt[3]{12n}}$ | <b>b</b> $\frac{1}{2\sqrt[3]{13n^4}}$ | <b>c</b> $\frac{1}{3\sqrt[3]{10n}}$ | <b>d</b> $\frac{1}{\sqrt[3]{8n}}$ | <b>e</b> $\frac{1}{\sqrt[3]{11n^2}}$ | <b>f</b> $\frac{1}{\sqrt[3]{11n}}$ |
|------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------|--------------------------------------|------------------------------------|

**6** Convert the fractional exponent to a radical

|                                    |                                     |                                     |
|------------------------------------|-------------------------------------|-------------------------------------|
| <b>a</b> $\frac{1}{2\sqrt[3]{2r}}$ | <b>b</b> $\frac{1}{\sqrt[3]{3r^3}}$ | <b>c</b> $\frac{1}{\sqrt[3]{2r^3}}$ |
| <b>d</b> $\frac{1}{\sqrt[3]{r^3}}$ | <b>e</b> $\frac{1}{\sqrt[3]{5r}}$   | <b>f</b> $\frac{1}{\sqrt[3]{2r}}$   |

$2^{-\frac{1}{3}} \cdot r^{-\frac{1}{3}}$

**7** Convert the fractional exponent to a radical

$11^{-\frac{1}{3}} \cdot z^{-\frac{1}{3}}$

|                                    |                                    |                                     |                                     |                                     |                                   |
|------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------|
| <b>a</b> $\frac{1}{\sqrt[3]{11z}}$ | <b>b</b> $\frac{1}{4\sqrt[3]{9z}}$ | <b>c</b> $\frac{1}{\sqrt[3]{7z^2}}$ | <b>d</b> $\frac{1}{3\sqrt[3]{14z}}$ | <b>e</b> $\frac{1}{2\sqrt[3]{13z}}$ | <b>f</b> $\frac{1}{\sqrt[3]{8z}}$ |
|------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------|