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Math worksheet on *'Radicals - Convert Square Root, Values and Variables, to Exponents - Negative (Level 2)'*. Part of a broader unit on *'Radicals - Simplifying Practice'*

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

$$\frac{1}{\sqrt{7b^3x^5}}$$

**a** $7^{\frac{1}{2}} \cdot b^{\frac{3}{2}} \cdot x^{\frac{5}{2}}$

**b** $7^{-\frac{1}{3}} \cdot b^{-\frac{3}{3}} \cdot x^{-\frac{5}{3}}$

**c** $7^{-\frac{1}{2}} \cdot b^{-\frac{2}{2}} \cdot x^{-\frac{7}{2}}$

**d** $7^{-\frac{1}{2}} \cdot b^{-\frac{3}{2}} \cdot x^{-\frac{6}{2}}$

**e** $7^{-\frac{1}{2}} \cdot b^{-\frac{3}{2}} \cdot x^{-\frac{5}{2}}$

**f** $7^{-\frac{1}{2}} \cdot b^{-\frac{5}{2}} \cdot x^{-\frac{6}{2}}$

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

$$\frac{1}{\sqrt{11r^5z^5}}$$

**a** $11^{\frac{1}{2}} \cdot r^{\frac{5}{2}} \cdot z^{\frac{5}{2}}$

**b** $44^{-\frac{1}{2}} \cdot r^{-\frac{5}{2}} \cdot z^{-\frac{5}{2}}$

**c** $11^{-\frac{1}{3}} \cdot r^{-\frac{5}{3}} \cdot z^{-\frac{5}{3}}$

**d** $11^{-\frac{1}{2}} \cdot r^{-\frac{7}{2}} \cdot z^{-\frac{4}{2}}$

**e** $11^{-\frac{1}{2}} \cdot r^{-\frac{5}{2}} \cdot z^{-\frac{5}{2}}$

**f** $22^{-\frac{1}{2}} \cdot r^{-\frac{5}{2}} \cdot z^{-\frac{5}{2}}$

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

$$\frac{1}{\sqrt{11m^5y}}$$

**a** $11^{-\frac{1}{2}} \cdot m^{-\frac{4}{2}} \cdot y^{-\frac{2}{2}}$

**b** $11^{-\frac{1}{2}} \cdot m^{-\frac{7}{2}} \cdot$

**c** $11^{-\frac{1}{2}} \cdot m^{-\frac{5}{2}} \cdot y^{-\frac{1}{2}}$

**d** $11^{\frac{1}{2}} \cdot m^{\frac{5}{2}} \cdot y^{\frac{1}{2}}$

**e** $11^{-\frac{1}{2}} \cdot m^{-\frac{4}{2}} \cdot y^{-\frac{1}{2}}$

**f** $44^{-\frac{1}{2}} \cdot m^{-\frac{5}{2}} \cdot y^{-\frac{1}{2}}$

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

$$\frac{1}{\sqrt{5n^5c}}$$

**a** $10^{-\frac{1}{2}} \cdot n^{-\frac{5}{2}} \cdot c^{-\frac{1}{2}}$

**b** $5^{-\frac{1}{2}} \cdot n^{-\frac{5}{2}} \cdot c^{-\frac{1}{2}}$

**c** $15^{-\frac{1}{2}} \cdot n^{-\frac{5}{2}} \cdot c^{-\frac{1}{2}}$

**d** $5^{-\frac{1}{3}} \cdot n^{-\frac{5}{3}} \cdot c^{-\frac{1}{3}}$

**e** $20^{-\frac{1}{2}} \cdot n^{-\frac{5}{2}} \cdot c^{-\frac{1}{2}}$

**f** $5^{\frac{1}{2}} \cdot n^{\frac{5}{2}} \cdot c^{\frac{1}{2}}$

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

$$\frac{1}{\sqrt{3dn^5}}$$

**a** $3^{\frac{1}{2}} \cdot d^{\frac{1}{2}} \cdot n^{\frac{5}{2}}$

**b** $3^{-\frac{1}{2}} \cdot d^{-\frac{1}{2}} \cdot n^{-\frac{7}{2}}$

**c** $9^{-\frac{1}{2}} \cdot d^{-\frac{1}{2}} \cdot n^{-\frac{5}{2}}$

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

**e** $12^{-\frac{1}{2}} \cdot d^{-\frac{1}{2}} \cdot n^{-\frac{5}{2}}$

**f** $6^{-\frac{1}{2}} \cdot d^{-\frac{1}{2}} \cdot n^{-\frac{5}{2}}$

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

$$\frac{1}{\sqrt{5m^5n^5}}$$

**a** $5^{-\frac{1}{2}} \cdot m^{-\frac{7}{2}} \cdot n^{-\frac{6}{2}}$

**b** $5^{-\frac{1}{2}} \cdot m^{-\frac{5}{2}} \cdot n^{-\frac{5}{2}}$

**c** $5^{-\frac{1}{2}} \cdot m^{-\frac{6}{2}} \cdot n^{-\frac{7}{2}}$

**d** $5^{-\frac{1}{3}} \cdot m^{-\frac{5}{3}} \cdot n^{-\frac{5}{3}}$

**e** $5^{\frac{1}{2}} \cdot m^{\frac{5}{2}} \cdot n^{\frac{5}{2}}$

**f** $5^{-\frac{1}{2}} \cdot m^{-\frac{5}{2}} \cdot n^{-\frac{6}{2}}$

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

$$\frac{1}{\sqrt{3rd^5}}$$

**a** $12^{-\frac{1}{2}} \cdot r^{-\frac{1}{2}} \cdot d^{-\frac{5}{2}}$

**b** $3^{-\frac{1}{2}} \cdot r^{-\frac{2}{2}} \cdot d^{-\frac{6}{2}}$

**c** $3^{-\frac{1}{2}} \cdot r^{-\frac{3}{2}} \cdot d^{-\frac{6}{2}}$

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

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

**f** $3^{-\frac{1}{3}} \cdot r^{-\frac{1}{3}} \cdot d^{-\frac{5}{3}}$