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Student Life

Library and
Learning Services

Example

Simplify $x^3 \div x^{\frac{2}{3}}$.

Answer

$$\mathbf{x^3 \div x^{\frac{2}{3}} = x^{\left(3-\frac{2}{3}\right)} = x^{\frac{7}{3}} \left(= \sqrt[3]{x^7}\right)}$$

Questions

Simplify:

1. $x^2 \times x^5$

2. $y^3 \times y^{\frac{1}{3}}$

3. $a^4 \div a^2$

4. $b^6 \times b^2 \div b^3$

5. $(c^{-1})^3$

6. $d^{-\frac{1}{2}} \times d^{\frac{1}{2}}$

7. $(z^{-2})^{-\frac{1}{2}}$

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Answers

1. $x^2 \times x^5 = x^{(2+5)} = x^7$

2. $y^3 \times y^{\frac{1}{3}} = y^{\left(3+\frac{1}{3}\right)} = y^{\frac{10}{3}} \left(= \sqrt[3]{y^{10}}\right)$

3. $a^4 \div a^2 = a^{4-2} = a^2$

4. $b^6 \times b^2 \div b^3 = b^{(6+2-3)} = b^5$

5. $(c^{-1})^3 = c^{(-1) \times 3} = c^{-3} \left(= \frac{1}{c^3}\right)$

6. $d^{-\frac{1}{2}} \times d^{\frac{1}{2}} = d^{\left(-\frac{1}{2}+\frac{1}{2}\right)} = d^0 = 1$

7. $(z^{-2})^{-\frac{1}{2}} = z^{(-2) \times \left(-\frac{1}{2}\right)} = z^1 = z$

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- Join a tutorial or workshop on the Study Development tutorial and workshop webpage or search 'YSJ study development tutorials.'

- Access our Study Success resources on the Study Success webpage or search 'YSJ study success.'

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