

## SM2 3.2: Simple Fractional Exponent Operations

Problems: Simplify each expression. Your answer should contain only positive exponents.

- |     |                           |              |     |                                    |                      |
|-----|---------------------------|--------------|-----|------------------------------------|----------------------|
| 1)  | $3^{1/3}3^{1/4}$          | $3^{7/12}$   | 2)  | $\frac{8^{1/2}}{8^{2/3}}$          | $\frac{1}{8^{1/6}}$  |
| 3)  | $2a^{3/4} \cdot a^{2/3}$  | $2a^{17/12}$ | 4)  | $5z^{-1/4}$                        | $\frac{5}{z^{1/4}}$  |
| 5)  | $\frac{8x^3}{2x^{1/3}}$   | $4x^{8/3}$   | 6)  | $\frac{5y^{1/2}}{15y^2}$           | $\frac{1}{3y^{3/2}}$ |
| 7)  | $(v^2)^{1/2}$             | $v$          | 8)  | $(x^{4/3})^{-2}$                   | $\frac{1}{x^{8/3}}$  |
| 9)  | $4mm^{3/2}$               | $4m^{5/2}$   | 10) | $\frac{2x^{-3/2}}{x^{-1/2}}$       | $\frac{2}{x}$        |
| 11) | $(n^{3/4})^{1/3}$         | $n^{1/4}$    | 12) | $\frac{4m^{7/4}}{2m}$              | $2m^{3/4}$           |
| 13) | $(r^0)^{2/3}$             | $1$          | 14) | $x^0 \cdot 2x^{2/3} \cdot 3x^{-2}$ | $\frac{6}{x^{4/3}}$  |
| 15) | $(5^4)^{1/2}$             | $25$         | 16) | $(144x^{16})^{1/2}$                | $12x^8$              |
| 17) | $\frac{a^{1/2}}{a^{1/6}}$ | $a^{1/3}$    | 18) | $(9x^9)^{1/2}$                     | $3x^{9/2}$           |