

## SM2 3.3: More Fractional Exponent Operations

- 1)  $(16x^4)^{3/2}$   $64x^6$       2)  $(a^{2/3}b^{5/4})^{1/6}$   $a^{1/9}b^{5/24}$
- 3)  $\left(\frac{a^3}{b^{1/2}}\right)^{3/4}$   $\frac{a^{9/4}}{b^{3/8}}$       4)  $(9x^6y^2)^{1/2}$   $3x^3y$
- 5)  $(x^{1/2}y)(x^{-3/4}y^{1/2})$   $\frac{y^{3/2}}{x^{1/4}}$       6)  $(m^3n^{-2/5}p)^6$   $\frac{m^{18}p^6}{n^{12/5}}$
- 7)  $(x^2)^{5/3} \cdot x^{10/3}$   $x^{20/3}$       8)  $\left(\frac{3c^{-1/3}}{d^{2/3}}\right)^3$   $\frac{27}{cd^2}$
- 9)  $\left(\frac{2w^{1/3}}{w^{-3/4}}\right)^3$   $8w^{13/4}$       10)  $(a^{1/2}b^{-1/3})(ab)$   $a^{3/2}b^{2/3}$
- 11)  $\frac{9^{1/4}h^{1/2}k^{3/2}}{9^{3/4}h^{1/3}k^2}$   $\frac{h^{1/6}}{3k^{1/2}}$       12)  $\frac{4^{1/4}s^{1/3}t^{-1/2}}{(4s^2t^{-3})^{-1/4}}$   $\frac{2s^{5/6}}{t^{5/4}}$
- 13)  $\frac{a^0b^0 \cdot (b^{-2/3})^{1/3}}{a^{-1}b^{1/3}}$   $\frac{a}{b^{5/9}}$       14)  $\left(\frac{a^3b^0}{a^{1/4}b^{1/3} \cdot a^{-2}b^3}\right)^{-7/4}$   $\frac{b^{35/6}}{a^{133/16}}$
- 15)  $\sqrt{x} \cdot \sqrt[3]{x}$   $x^{5/6}$  or  $\sqrt[6]{x^5}$       16)  $\sqrt{\sqrt[3]{y}}$   $y^{1/6}$  or  $\sqrt[6]{y}$
- 17)  $\sqrt[4]{\sqrt[5]{\sqrt[6]{z}}}$   $z^{1/120}$  or  $\sqrt[120]{z}$       18)  $\sqrt[5]{(\sqrt[3]{x})^{1/4}}$   $x^{1/60}$  or  $\sqrt[60]{x}$
- 19)  $x^{3/4} \cdot \sqrt[4]{x}$   $x$       20)  $(\sqrt{m^{1/2}}) \cdot \sqrt[3]{m^{3/4}}$   $m^{1/2}$  or  $\sqrt{m}$