

$$2) a) 16^{\frac{1}{4}} = \sqrt[4]{16} = 2$$

$$b) (16x^{12})^{\frac{3}{4}} = (\sqrt[4]{16x^{12}})^3 = (2x^3)^3 = 8x^9$$

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$$1) a) 125^{\frac{1}{3}} = \sqrt[3]{125} = 5$$

$$b) 125^{-\frac{2}{3}} = \frac{1}{125^{\frac{2}{3}}} = \frac{1}{(\sqrt[3]{125})^2} = \frac{1}{5^2} = \frac{1}{25}$$

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$$1 a) 16^{-\frac{1}{4}} = \frac{1}{16^{\frac{1}{4}}} = \frac{1}{\sqrt[4]{16}} = \frac{1}{2}$$

$$b) x(2x^{-\frac{1}{4}})^4 = x(2^4 x^{-1}) = 2^4 = 16$$

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$$1) a) 25^{\frac{1}{2}} = \sqrt{25} = 5$$

$$b) 25^{-\frac{3}{2}} = \frac{1}{25^{\frac{3}{2}}} = \frac{1}{(\sqrt{25})^3} = \frac{1}{5^3} = \frac{1}{125}$$

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$$2) \quad a) \quad 32^{3/5} = (\sqrt[5]{32})^3 = 2^3 = 8$$

$$b) \quad \left(\frac{25x^4}{4}\right)^{-1/2} = \left(\frac{4}{25x^4}\right)^{1/2} = \sqrt{\frac{4}{25x^4}} = \frac{2}{5x^2}$$


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$$2) \quad 8^{2x+3} \text{ to be expressed as } 2^y$$

$$8^{2x+3} = (2^3)^{2x+3} = 2^{6x+9}$$

$$\therefore y = 6x + 9$$


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$$3) \quad a) \quad 8^{5/3} = (\sqrt[3]{8})^5 = 2^5 = 32$$

$$b) \quad \frac{(2x^{1/2})^3}{4x^2} = \frac{8x^{3/2}}{4x^2} = 2x^{-1/2}$$


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