Algebra I TUESDAY 2-5-13 CLASS NOTES

Homework Review - Pg 401

(1) $8^{\frac{1}{3}} = \sqrt[3]{8^1} = \boxed{2}$

(3) $16^{\frac{1}{2}} = \sqrt[2]{16^1} = \boxed{4}$

ex $\sqrt[2]{4^2}$

(5) $27^{\frac{1}{3}} = \sqrt[3]{27} = \boxed{3}$

(7) $216^{\frac{1}{3}} = \sqrt[3]{216^1} = \boxed{6}$

(9) $625^{\frac{1}{4}} = \sqrt[4]{625^1} = \boxed{5}$

ex $\sqrt[4]{5^4}$

(11) $8^{\frac{1}{3}} + 64^{\frac{1}{2}}$

$\sqrt[3]{8^1} + \sqrt[2]{64^1}$

$2 + 8 = \boxed{10}$

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(13) $25^{\frac{1}{2}} - 1^{\frac{1}{4}}$

$\sqrt[2]{25^1} - \sqrt[4]{1^1}$

$5 - 1 = \boxed{4}$

(15) $8^{\frac{5}{3}}$

$\left(\sqrt[3]{8^1}\right)^5$

$(2)^5 = \boxed{32}$

(23) $\sqrt{x^4 y^2} = \sqrt[2]{x^4}\sqrt[2]{y^2}$

$\Downarrow$

$x^{\frac{4}{2}} y^{\frac{2}{2}}$

$\boxed{x^2 y}$

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(25) $\sqrt{x^6 y^6} = x^{\frac{6}{2}} y^{\frac{6}{2}}$

$\boxed{x^3 y^3}$

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(27) $(a^{\frac{1}{2}})^2 \sqrt{a^2}$

$a\, a^{\frac{2}{2}} = aa = \boxed{a^2}$

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(29) $\dfrac{(z^{\frac{1}{3}})^3}{\sqrt{z^2}} = \dfrac{z}{z} = \boxed{1}$

Answers ⇒ No Negative Exponents

⇒ No fractional exponents in denominator, Also, No radicals in denominator

(Ex) $\dfrac{1}{x^{\frac{1}{2}}} \cdot \dfrac{x^{\frac{1}{2}}}{x^{\frac{1}{2}}} = \boxed{\dfrac{x^{\frac{1}{2}}}{x^{1}}}$

SIMPLIFIED

$\dfrac{1}{\sqrt{x}} \cdot \dfrac{\sqrt{x}}{\sqrt{x}} = \boxed{\dfrac{\sqrt{x}}{x}}$

SIMPLIFIED

(Ex) $\dfrac{1}{x^{\frac{5}{3}}} \cdot \dfrac{x^{\frac{1}{3}}}{x^{\frac{1}{3}}} = \boxed{\dfrac{x^{\frac{1}{3}}}{x^{2}}}$

SIMPLIFIED

(33) $\dfrac{(r^2 t^6)^{-\frac{1}{2}}}{r^{-\frac{1}{3}}} = \dfrac{r^{\frac{1}{3}}}{(r^2)^{\frac{1}{2}}}$ *

$= \dfrac{r^{\frac{1}{3}}}{r^{\frac{3}{3}}} = \boxed{\dfrac{r^{\frac{1}{3}}}{r}}$

$= r^{-\frac{2}{3}}$

$= \dfrac{1}{r^{\frac{2}{3}}} \cdot \dfrac{r^{\frac{1}{3}}}{r^{\frac{1}{3}}}$

$= \boxed{\dfrac{r^{\frac{1}{3}}}{r}}$ ✓

RADICAL ✓

Worksheet Practice

Radical Form

① $x^{\frac{3}{4}} = \sqrt[4]{x^3}$ or $\left(\sqrt[4]{x}\right)^3$

③ $(3p)^{\frac{5}{4}} = \sqrt[4]{(3p)^5}$ or $\left(\sqrt[4]{3p}\right)^5$ ✓

⑦ $(10m^2)^{\frac{1}{5}} = \sqrt[5]{10m^2}$

Exponential Form

⑰ $\left(\sqrt[3]{5r}\right)^4 = (5r)^{\frac{4}{3}}$ ✓