You will need:

-HW from Thur 8/30

-HW from last night (1-14)

-Agenda

-Pencil/pen for notes

-Spiral/comp notebook

Determine whether each expression is equivalent to $x^{\frac{7}{4}}$.

Expression	Yes	No
$\sqrt[7]{x^4}$	○	●
$\sqrt[4]{x^7}$	●	○
$(\sqrt[4]{x})^7$	●	○
$\sqrt{x^{\frac{7}{4}}}$	○	●
$\sqrt[4]{x^5} \cdot \sqrt[4]{x^2}$	●	○
$\sqrt[5]{x^4} \cdot \sqrt[2]{x^4}$	○	●
$\frac{(\sqrt[4]{x})^7}{(\sqrt{x})^0}$	●	○

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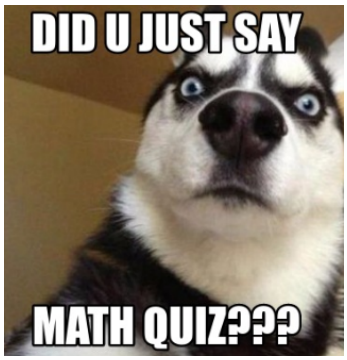

There will be a retake on this quiz tomorrow.

We will Review the original quiz.

Exponent Rule	Examples
$x^a \cdot x^b = x^{a+b}$	$c^3 \cdot c^5 = c^8 \quad 3^5 \cdot 3^8 = 3^{13}$ $5(5^n) = 5^1(5^n) = 5^{n+1}$
$a^x \cdot b^x = (ab)^x$	$2^4 \cdot 3^4 = 6^4 \quad 12^5 = 2^{10} \cdot 3^5$
$\frac{x^a}{x^b} = x^{(a-b)}$	$\frac{2^5}{2^{11}} = \frac{1}{2^6} = 2^{-6} \quad \frac{x^{10}}{x^3} = x^7$
$\left(\frac{a}{b}\right)^x = \frac{a^x}{b^x}$	$\left(\frac{10}{2}\right)^6 = \frac{10^6}{2^6} = 5^6 \quad \frac{3^5}{9^5} = \left(\frac{3}{9}\right)^5 = \left(\frac{1}{3}\right)^5$
$(a^x)^y = a^{xy} = (a^y)^x$	$(3^2)^4 = 3^{2 \cdot 4} = 3^8 = 3^{4 \cdot 2} = (3^4)^2$
$x^{-a} = \frac{1}{x^a}$	$\left(\frac{3}{2}\right)^{-2} = \left(\frac{2}{3}\right)^2 = \frac{4}{9} \quad 2x^{-4} = \frac{2}{x^4}$

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Simplify each expression *completely!* Recall rules for determining when an expression is simplified. Circle your final answer.

$x^a \cdot x^b = x^{a+b}$ $(x^a)^b = x^{a \cdot b}$

1. $(5x^3y^2)(4xy^6)$

$(5 \cdot 4)(x^3x^1)(y^2y^6)$

$xxx \; x \quad yy \; yyyyyy$

$20x^4y^8$

2. $(2x^3)^5$

$(2^5)(x^{15})$

$32x^{15}$

$(2x^3)^5$

$(2x^3)(2x^3)(2x^3)(2x^3)(2x^3)$

$32x^{15}$

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$\left(\frac{x}{y}\right)^2 = \frac{x^2}{y^2}$

3. $\left(\frac{4x^7y^5}{12x^2y^3}\right)^2$

$\frac{(4^1x^7y^5)^2}{(12^1x^2y^3)^2} = \frac{4^2x^{14}y^{10}}{12^2x^4y^6}$

$= \frac{1}{\cancel{16}}\frac{x^{14}y^{10}}{\cancel{144}_{9}x^4y^6}$

$\frac{x^{10}y^4}{9}$

4. $(x^2y^{-3})(x^{-2}y)$

$(x^2x^{-2})(y^{-3}y^1)$

$(x^0)(y^{-2})$

$1 \cdot \frac{1}{y^2}$

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5. $\dfrac{(4^1x^5)^2}{2\,a^{-3}\,x^7} = \dfrac{4^2x^{10}}{2a^{-3}x^7} = \dfrac{16a^3x^3}{2x^1} = 8a^3x^3$

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Homework

Finish 15-24 on radical worksheet

Retake of exponent quiz is tomorrow.

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