Algebra exam Monday! 4/11/2011 Section 12 / 4-4-11
Review Online. NO CALCULATORS! M

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typical problems/methods.

I.) Simplifying/Factoring

Method: Factoring by least powers. (see # 3, 7, 8 on review)

(a) $x^2(x-2)^3 + x^4(x-2)^2$

$= x^2(x-2)^2\left(\overset{x^2+x-2}{(x-2)+x^2}\right)$

$= \boxed{x^2(x-2)^2(x-1)(x+2)}$

(b) $x^{-1/2}(x+1)^{3/2} + 2x^{3/2}(x+1)^{1/2}$

$= x^{-1/2}(x+1)^{1/2}\left[\overset{2x^2+x+1}{(x+1)^1 + 2x^2}\right]$

$= \dfrac{(2x^2+x+1)(x+1)^{1/2}}{x^{1/2}}$

II.) Simplifying fractions (see #4, 5, 6 on review)

(i.) $\dfrac{a^{-1}-b^{-1}}{a^{-2}-b^{-2}}$

$= \dfrac{\left(\frac{1}{a}-\frac{1}{b}\right)}{\left(\frac{1}{a^2}-\frac{1}{b^2}\right)} \dfrac{(a^2b^2)}{(a^2b^2)}$

$= \dfrac{ab^2 - ba^2}{b^2-a^2}$

$= \dfrac{ab(\cancel{b-a})}{(\cancel{b-a})(b+a)}$

$= \dfrac{ab}{b+a}$

(ii) $\dfrac{\left(\frac{1}{x}+y\right)}{\left(\frac{1}{xy}+x\right)} \dfrac{xy}{xy}$

$= \dfrac{y+xy^2}{1+x^2y}$

$= \dfrac{y(1+xy)}{1+x^2y}$

Warm-up 4/4/2011 (Turn in 1 sheet per 2-4 people)

1.) Find the exact value:

(a) $\sec\left(\frac{11\pi}{3}\right) =$ $\csc\left(\frac{11\pi}{3}\right) =$ $\sec(-\pi/3) =$

(b) $\cot(-\pi/3) =$ $\cot(2\pi/3) =$ $\cot\left(\frac{5\pi}{3}\right) =$

2.) terminal point $P(x,y)$ given. Find $\sin t$, $\cos t$, $\tan t$.
Give two possible values of t.

(a) $P(x,y) = \left(\frac{\sqrt{3}}{2}, \frac{-1}{2}\right)$

(b) $P(x,y) = \left(\frac{-\sqrt{2}}{2}, \frac{-\sqrt{2}}{2}\right)$

3.) Write the first expression in terms of the second if the terminal point determined by t is in the given quadrant.

(a) $\tan t$; $\cos t$; quad III.

(b) $\csc t$; $\cot t$; Quad II.

If done early; FOR NOTES

1.) Sketch 2 periods of $\sin t$ and $\cos t$.

2.) using transformations, graph: $\cos(\pi t)$; $2\cos(t)$
$\sin(2t)$; $\frac{1}{2}\sin(t)$

3.) any problem p 32.