Calculus AB

Students, get out your Summer Packet and go over any questions you have first with the people at your table. We will go over any questions you have as a class shortly, after Ms. Hansen takes attendance.

Aug 23-2:15 PM

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

$2(x-4)^{1/2-3/4} = 2(x-4)^{-1/4} = \boxed{\frac{2}{(x-4)^{1/4}}}$ OR $\frac{2}{\sqrt[4]{x-4}}$

(5) $\left(\frac{1}{x^{-2}} + \frac{4}{x^{-1}y^{-1}} + \frac{1}{y^{-2}}\right)^{-1/2}$

$= \left(x^2 + 4xy + y^2\right)^{-1/2} = \boxed{\frac{1}{(x^2+4xy+y^2)^{1/2}}}$ OR $\frac{1}{\sqrt{x^2+4xy+y^2}}$

(40) $\frac{\frac{x}{x}\cdot\frac{x}{(1-x)} + \frac{(1+x)}{x}\cdot\frac{(1-x)}{(1-x)}}{\frac{(1+x)}{(1+x)}\cdot\frac{1-x}{x} + \frac{x}{(1+x)}\cdot\frac{x}{x}} = \frac{\frac{x^2}{x(1-x)} + \frac{(1+x)(1-x)}{x(1-x)}}{\frac{(1+x)(1-x)}{x(1+x)} + \frac{x^2}{x(1+x)}} =$

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

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

(49) $\frac{(x-5)}{(x+1)} = \frac{3}{5}$ $x \neq -1$ $\rightarrow$ $5(x-5) = 3(x+1)$

$5x-25 = 3x+3$

$2x = 28$

$\boxed{x = 14}$

(69) $\log_5(x+3) = y$ ln log$_e$

$\ln 5^y = \ln(x+3)$

$y\ln 5 = \ln(x+3)$

$\frac{y\ln 5}{\ln 5} = \frac{\ln(x+3)}{\ln 5}$

$\boxed{y = \frac{\ln(x+3)}{\ln 5}}$

$\log_2 3 = \frac{\log 3}{\log 2}$

Change of base: $\log_b a = \frac{\log_c a}{\log_c b}$

$\log_b x = y \leftrightarrow b^y = x$

$\log_2 8 = 3 \leftrightarrow 2^3 = 8$

Aug 25-9:33 AM

Csc → Cosecant → $\frac{1}{\sin\theta}$

$\tan\theta = \frac{\sin\theta}{\cos\theta}$

Sec → Secant → $\frac{1}{\cos\theta}$

Cot → Cotangent → $\frac{1}{\tan\theta}$

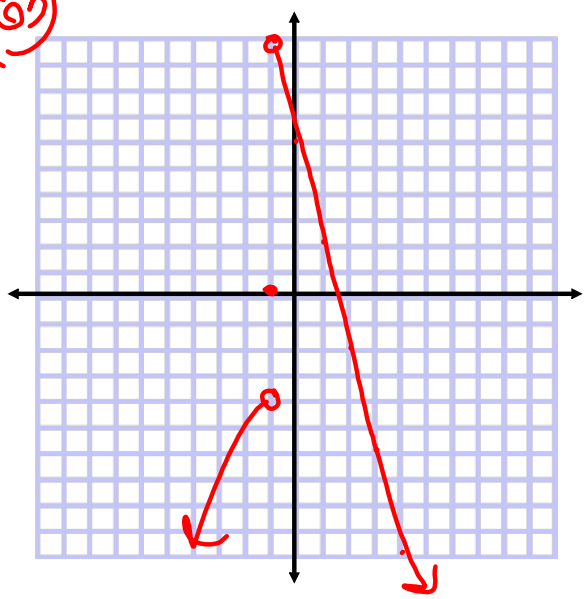
	Cos	Tan	Sin	Csc	Sec	Cot
0	1	0	0	undef	1	undef
$\pi/6$	$\sqrt{3}/2$	$\sqrt{3}/3$	$1/2$	2	$\frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$	$\sqrt{3}$

$$\frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{2}\cdot\frac{2}{\sqrt{3}} = \frac{1}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{\sqrt{3}\cdot 3} = \frac{\sqrt{3}}{3}$$

equivalent

$$\frac{2}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{\sqrt{3}\cdot 3} = \frac{2\sqrt{3}}{3}$$

(63)



$$f(x) = \begin{cases} x^2-5, & x<-1 \\ 0, & x=-1 \\ 6-4x, & x>-1 \end{cases}$$

$-4x+6$