

Quiz 3  
SM121, Section 2043

8 September 2008

**Use of calculators is not allowed!**

(4 pts)

- Fill in the following table.

$\Theta$	0	$\pi/6$	$\pi/4$	$7\pi/3$
$\sin \Theta$	0	$1/2$	$\sqrt{2}/2$ or $\frac{1}{\sqrt{2}}$	$\sqrt{3}/2$
$\cos \Theta$	1	$\sqrt{3}/2$	$\sqrt{2}/2$ or $\frac{1}{\sqrt{2}}$	$1/2$

(3 pts)

- Solve the following equation for x.

$$\ln(2x + 5) = -4$$

$$e^{\ln(2x+5)} = e^{-4}$$

$$2x + 5 = e^{-4}$$

$$2x = e^{-4} - 5$$

$$\boxed{x = \frac{1}{2}(e^{-4} - 5)}$$

(3 pts)

- Simplify  $\log_2(a+b) + \log_2(a-b) - 2\log_2 c$

$$\log_2(a+b) + \log_2(a-b) - 2\log_2 c$$

$$= \log_2(a+b)(a-b) - 2\log_2 c$$

$$= \log_2(a+b)(a-b) - \log_2 c^2$$

$$= \log_2 \frac{(a+b)(a-b)}{c^2}$$

$$= \boxed{\log_2 \left( \frac{a^2 - b^2}{c^2} \right)} \quad \text{or} \quad \boxed{\log_2 \frac{(a+b)(a-b)}{c^2}}$$