UT ARLINGTON CALCULUS BOWL
SAMPLE PROBLEMS

PROBLEM 1

$\frac{d}{dx}\left(\cos\left(9\pi\right)^{30}\right) =$

(a) $270\,(\cos(9\pi))^{29}\cdot\sin(9\pi)$
(b) $30\,(\cos(9\pi))^{29}$
(c) $30\,(\cos(9\pi))^{29}\cdot\sin(9\pi)$
(d) 0
(e) The function is not differentiable

PROBLEM 2

The graph of which of the following equations is a straight line passing through the origin:

(a) $x+2y-1=0$
(b) $3x=2y-3$
(c) $4x-3=0$
(d) $5x=4y$
(e) $7y-9=0$

PROBLEM 3

Let f be a twice differentiable function such that $f(0)=4,\ f(3)=5,$ and $f'(3)=6.$ What is $\int_0^3 f'(x)\,dx$?

(a) -2
(b) -1
(c) 1
(d) 2
(e) 9