Dawson College: **Linear Algebra**: 201-105-05-S4: Fall 2012

Name: _____
Student ID: _____

Quiz 7

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. §3.2 #23d *(5 marks)* Find the cosine of the angle θ between $\mathbf{u} = (-2,2,3)$ and $\mathbf{v} = (1,7,-4)$.

Question 2. §3.3 #30 *(5 marks)* Find the distance between the point and the line. *YOU MUST use projections to solve this problem*

$(-1,4)$; $x-3y+2=0$

Question 3. *(5 marks)* Find all values of λ for which $\det(A) = 0$.

$$\begin{bmatrix} \lambda - 4 & \lambda^{101} & 5 & 0 \\ -1 & 0 & \lambda & 0 \\ 0 & \lambda + 2 & 0 & 0 \\ 1 & 2 & 3 & \lambda \end{bmatrix}$$