Dawson College: **Linear Algebra**: 201-105-DW-S5: Fall 2022: **Quiz 11** name: _____

Books, watches, notes or cell phones are **not** allowed. The **only** calculators allowed are the Sharp EL-531**. You **must** show all your work, the correct answer is worth 1 mark the remaining marks are given for the work.

Question 1. Given $A(1,2,3), B(0,1,-2)$ and $C(-1,0,5)$

a. *(4 marks)* Find the area of the triangle ABC.

b. *(3 marks)* Find the general and parametric equation of the plane that contains the points A, B and C.

Question 2. *(4 marks)* Simplify $(\vec{u}+\vec{v}) \times (\vec{u}-\vec{v})$ and write as a single term.

Questions 3. *(5 marks)* Find the equation of the plane through the point $P(1,3,1)$ that is parallel to the line $(x,y,z) = (4,0,4) + t(-2,1,2) \quad t \in \mathbb{R}$ and perpendicular to the plane $3x - 5y + 2z = 13$.