

Show all work. 5 points each.

1) Find a vector equation and a parametric equations for the line segment that joins  $P(1, -1, 2)$  and  $Q(4, 1, 7)$ .

2) Find parametric equations for the tangent line to the curve  $x = t^5$ ,  $y = t^4$ ,  $z = t^3$  at the point  $(1, 1, 1)$ . Hint: What  $t$  corresponds to the point  $(1, 1, 1)$ ?