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Selected Problem Set 6

1. Suppose we have a ray starting at point $\vec{e}=(2,2,2)^T$ in direction $\vec{d}=(-1,-1,-1)^T$. Find the value of t at which this ray intersects the sphere of radius one centered at the origin.

2. Find the 3D coordinates of the intersection point from the previous question.

3. Why do we find two intersections, and not just one?

4. Form the equation of a Bezier curve with points $p_1=(0,0)^T$, $p_2=(2,2)^T$, $p_3=(4,-2)^T$, $p_4=(6,0)^T$.

5. What are the coordinates of the point on this curve when $t=0.5$?