

Quiz 2

Name:

Calculus III

ID:

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1. Consider the curve shown below, parametrized by $\mathbf{r}(t) = \langle t^3 - 2t, t^2 - t \rangle$.

(a) On the graph below, draw the vectors $\mathbf{r}(1)$ and $\mathbf{r}(-1)$.

$\mathbf{r}(1) = \langle -1, 0 \rangle$ and $\mathbf{r}(-1) = \langle 1, 2 \rangle$. See the red arrows below.

(b) Compute $\mathbf{r}'(t)$.

$$\mathbf{r}'(t) = \langle 3t^2 - 2, 2t - 1 \rangle$$

(c) On the graph below, draw $\mathbf{r}'(1)$ and $\mathbf{r}'(-1)$, based at $\mathbf{r}(1)$ and $\mathbf{r}(-1)$, respectively.

$\mathbf{r}'(1) = \langle 1, 1 \rangle$ and $\mathbf{r}'(-1) = \langle 1, -3 \rangle$. See the blue arrows below.

