4.8 The components of a velocity field are given by $u = x + y$, $v = xy^3 + 16$, and $w = 0$. Determine the location of any stagnation points $(V = 0)$ in the flow field.

$$V = \sqrt{u^2 + v^2 + w^2} = \sqrt{(x+y)^2 + (xy^3+16)^2} = 0$$

or
$$u = x + y = 0 \text{ so that } x = -y$$

and
$$v = xy^3 + 16 = 0 \text{ so that } xy^3 = -16$$

Hence, $(-y)y^3 = -16$, or $y = 2$
Therefore, $V = 0$ at $\underline{x = -2, \ y = 2}$

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