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Extreme Value Theorem: If $f$ is continuous on a closed interval (meaning: ___ ), closed \& bounded then $f(x)$ attains its absolute max and absolute min somewhere on this interval.

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the test is inconclusive.

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- Critical points on interior
- Check boundary


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This problem must have an absolute maximum, which must occur at a critical point. (Why?) Therefore $(x, y, z)=(2,2,1)$ is the absolute maximum, and the maximum volume is $x y z=4$.

