**Midterm 2** **Name:**

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|---|---|---|
| Compute a limit of a function of several variables | | /20 |
| Convert a limit in cartesian coordinates to polar coordinates | | /5 |
| Define continuity for functions of several variables | | /5 |
| Give an example of a limit that does not exist | | /5 |
| Compute partial derivatives | | /25 |
| Compute the gradient | | /10 |
| Compute the directional derivative | | /10 |
| Compute higher partial derivatives | | /10 |
| Illustrate that higher partials commute | | /5 |
| Describe what a partial derivative is measuring | | /5 |
| Write down a linear approximation to a function | | /20 |
| Chain rule | | /35 |
| Define global/local max/min | | /5 |
| Find critical points | | /20 |
| Find max and min values | | /20 |
| Apply second derivative test | | /5 |
| Use Lagrange multipliers | | /20 |
| Total: | | /225 |