

Quiz 13 Key — MA16020 — March 2, 2018

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Min	Mean	Max
1	6.8	10

1. (4 points) The contour lines for $z = \frac{1}{2} \ln(5(x+2)^2 + 5(y-4)^2)$ are circles. Find the center of these circles, and express their radius in terms of z .

Center is at $(-2, 4)$, radius is $\frac{e^z}{\sqrt{5}}$.

2. Let $f(x, y) = 6x^2 + 8xy^2 - y^3$.

(a) (3 points) Find the full derivative, $\frac{d}{dx}f(x, y)$.

(b) (3 points) Find the partial derivative, $\frac{\partial}{\partial x}f(x, y)$.

(a) $12x + 8y^2 + 16xy \frac{dy}{dx} - 3y^2 \frac{dy}{dx}$

(b) $12x + 8y^2$