

Answer key for Review Test 2

1. Parabola
2. circular hyperboloid of one sheet
3. $\frac{\pi}{4}$
4. -4
5. travel along different paths: $(x,0)$ and $x = y^2$
6. $\frac{y^3 + 2xy + 2y^2}{(x + y)^2}$
7. $-6xy^2 \cos(x^2 + y^3) + \frac{-3xy^5}{\sqrt{(x^2 y^6 - 1)^3}}$
8. $\frac{-1}{\sec^2 2z(e^{\tan 2z})}$
9. 0
10. $\sec^3 3rs(2r+s^2) \sqrt{re^s} (2 + 9s(2r+s^2)\tan 3rs + \frac{2r+s}{2re^s}$
11. $i - \frac{1}{e}j + k$
12. $\frac{\sqrt{2e^2 + 1}}{e}$
13. $\frac{6}{\sqrt{10}}$
14. $(-2,0)$ is a saddle point, $(-2,1)$ is a relative minimum
15. $(6,3)$
16. $(\frac{1}{5}, \frac{2}{5}, \frac{1}{5})$