

hence, if f is a function of u , then $df = f'(u) du$, where $du = dx + 2y dy$.
With this substitution, the differential equation becomes
$$f'(u) du = -\frac{1}{u} du.$$

Integrating both sides, we get
$$\ln |f| = -\ln |u| + C,$$

where C is an arbitrary constant. This can be written as
$$f = \frac{C}{u}.$$

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Answer: $y = \frac{C}{x + 2y^2}$

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