

First-Order Partial Differential Equations > Linear Equations > Section 1.2

4. 
$$a\frac{\partial w}{\partial x} + b\frac{\partial w}{\partial y} = f(x) + g(y)$$
.

General solution:

$$w = \frac{1}{a} \int f(x) dx + \frac{1}{b} \int g(y) dy + \Phi(bx - ay),$$

where  $\Phi(u)$  is an arbitrary function.

## Reference

**Polyanin, A. D., Zaitsev, V. F., and Moussiaux, A.,** *Handbook of First Order Partial Differential Equations*, Taylor & Francis, London, 2002.

Copyright © 2004 Andrei D. Polyanin

http://eqworld.ipmnet.ru/en/solutions/fpde/fpde1204.pdf