

QNO: 1

MT-224

CAL-2

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20P-0147

①  $\frac{1}{NO}$

The equation will be

$$(6xy^3 + \cos y)dx + (8kx^2y^2 - x \sin y)$$

$$My = 18xy^2 + (-\sin y)$$

$$Nx = 4kx^2y^2 - \sin y$$

For exact differential Equation

$$My = Nx$$

$$18xy^2 - \sin y = 4kx^2y^2 - \sin y$$

$$4kx^2y^2 = 18xy^2$$

$$k = \frac{18}{4}$$

$$k = \frac{9}{2}$$

