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In [2]: def f(m, n):
        x = m + n
        return (((x - 2) * (x - 1)) // 2) + m
```

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In [3]: f(1, 3)
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Out[3]: 4
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In [22]: import math
def f_inverse(y):
    x = math.ceil((math.sqrt(8 * y + 1) + 3) / 2) - 1
    m = y - ((x - 2) * (x - 1)) // 2
    n = x - m
    return m, n
```

$$y = \frac{(x-2)*(x-1)}{2} + m$$

$$y = \frac{x^2-3x+2}{2} + m$$

$$0 = \frac{x^2-3x+2}{2} + m - y$$

$$0 = x^2 - 3x + 2 + 2m - 2y$$

$$a = x^2 \quad b = -3x \quad c = 2(m - y + 1)$$

$$x = \frac{3 \pm \sqrt{9-8(m-y+1)}}{2}$$

$$x = \frac{3 \pm \sqrt{8y-8m+1}}{2}$$

$$x = \frac{\sqrt{8y+1}+3}{2}$$

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In [24]: f_inverse(23)
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Out[24]: (2, 6)
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In [25]: f_inverse(16)
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Out[25]: (1, 6)
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