

$$\int \frac{z-3}{z+1} dz = -z - \int dz$$

$$\int \frac{z-3+4-4}{z+1} dz = -\int dz$$

$$\int \frac{z+1-4}{z+1} dz = -\int dz$$

$$\int \frac{z+1}{z+1} dz - \int \frac{4}{z+1} dz = -z$$

$$\int dz - 4 \ln|z+1| = -z + C$$

$$z - 4 \ln|z+1| = -z + C$$

$$3x-4y + 4 \ln|3x-4y+1| = -z + C$$

$$-4 \left[y + \ln|3x-4y+1| \right] = -4x + C$$

$$y + \ln|3x-4y+1| = x + C$$

$$x - y + C = \ln|3x-4y+1| \quad \underline{\text{Ans}}$$