1. June/2021/Paper_11/No.9a(i)

(a) **(i)** Write $6xy+3y+4x+2$ in the form $(ax+b)(cy+d)$, where a, b, c and d are positive integers. [1]

2. June/2021/Paper_21/No.1

(a) Write the expression $x^2 - 6x + 1$ in the form $(x+a)^2 + b$, where a and b are constants. [2]

(b) Hence write down the coordinates of the minimum point on the curve $y = x^2 - 6x + 1$. [1]

3. June/2021/Paper_21/No.7

Find the exact values of the constant k for which the line $y = 2x + 1$ is a tangent to the curve $y = 4x^2 + kx + k - 2$. [6]

4. June/2021/Paper_22/No.3

Find the values of the constant k for which $(2k-1)x^2+6x+k+1=0$ has real roots. [5]

5. June/2021/Paper_24/No.7

(a) Write the expression $4x^2 - 4x + 7$ in the form $p(x+q)^2 + r$, where p, q and r are constants. [3]

(b) Hence find the greatest value of $\dfrac{1}{4x^2 - 4x + 7}$ and state the value of x at which this occurs. [2]