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| **Differentiation Revision** |
| **(a)** | **(b)** | **(c)** | **(d)** |
| $$y=4x^{2}+5x-7$$Find $\frac{dy}{dx}$ | $$y=\left(2x-3\right)\left(x+5\right)$$Find $\frac{dy}{dx}$ | Find $\frac{dy}{dx} $when $y=\frac{x^{5}-3x^{2}}{x^{2}}$ | Find $\frac{dy}{dx} $when $y=15x^{2}+\frac{2}{x}$ |
| **(e)** | **(f)** | **(g)** | **(h)** |
| $$y=x^{2}(3-x)$$Find the value of $\frac{dy}{dx}$ when $x=-4$ | The gradient of the curve$y=4x^{2}-kx$ at the point where $x=-2$ is $-6$. Find the value of $k$. | Find the coordinates of the minimum point of the curve $y=x^{2}-5x+1$ | The distance of a particle is given by $s=t^{3}-5t^{2}+3t$. Find the velocity and acceleration at time $t=4 $seconds  |
| **(i)** | **(j)** | **(k)** |
| A curve with equation $y=\frac{1}{3}x^{3}-3x^{2}+5x$has two turning points. Work out the coordinates of the turning points. | Find the range of values for which the gradient of the curve $y=x^{3}-5x^{2}+3x-2 $is negative  | A rectangle has a perimeter of 120 cm. Given that the length of the rectangle is $x$, show that the area $A=60x-x^{2}$Hence find the length $x$ that gives the maximum area of the rectangle. |