QUESTION NUMBER
1.

$$y = x^{5/3} - 10x^{-4}$$

$$\frac{dy}{dx} = \frac{5}{3}x^{2/3} + 40x^{-5}$$

Marking instructions for each question

Question	Generic scheme	Illustrative scheme	Max mark
1.	$\bullet^1$ express second term in differentiable form	$\bullet^1$ $\ldots -10x^{-4}$ stated or implied by $\bullet^3$	**3**
	$\bullet^2$ differentiate one term	$\bullet^2$ $\frac{5}{3}x^{\frac{2}{3}}\ldots$ or $\ldots +40x^{-5}$	
	$\bullet^3$ complete differentiation	$\bullet^3$ $\frac{5}{3}x^{\frac{2}{3}}+40x^{-5}$	

Notes:

1. Where candidates "differentiate over two lines" see Candidates A and B.
2. $\bullet^3$ is only available for differentiating a term with a negative index.
3. Where candidates attempt to integrate throughout, only $\bullet^1$ is available.

Commonly Observed Responses:

Candidate A - differentiating over two lines

$y = x^{\frac{5}{3}} - \frac{10}{x^4}$

$y = \frac{5}{3}x^{\frac{2}{3}} - 10x^{-4}$ $\bullet^1$ ✓

$y = \frac{5}{3}x^{\frac{2}{3}} + 40x^{-5}$ $\bullet^2$ ✓ $\bullet^3$ ✗

Candidate B - differentiating over two lines

$y = x^{\frac{5}{3}} - \frac{10}{x^4}$

$y = \frac{5}{3}x^{\frac{2}{3}} - 10x^{-4}$ $\bullet^1$ ✓

$y = \frac{5}{3}x^{\frac{2}{3}} + 40x^{-3}$ $\bullet^2$ ✓ $\bullet^3$ ✗

Candidate C

$\vdots$

$\frac{5}{3}x^{\frac{2}{3}} + 40x^{-5} + c$ $\bullet^3$ ✗