(6) $y = \frac{1}{(1-3x)^5}$

$= (1-3x)^{-5}$

$\frac{dy}{dx} = -5(1-3x)^{-6} \times (-3)$

$= 15(1-3x)^{-6}$

Question			Generic scheme	Illustrative scheme	Max mark
6.			$\bullet^1$ write in differentiable form $\bullet^2$ start to differentiate $\bullet^3$ complete differentiation	$\bullet^1$ $(1-3x)^{-5}$ stated or implied by $\bullet^2$ $\bullet^2$ $-5(1-3x)^{-6}\ldots$ $\bullet^3$ $\ldots\times(-3)$	**3**

Notes:

1. Where candidates attempt to expand $(1-3x)^{-5}$, no further marks are available.
2. $\bullet^2$ is only available for differentiating an expression with a negative power.

Commonly Observed Responses:

Candidate A

$y=(1-3x)^{-5}$ $\bullet^1$ ✓

$\frac{dy}{dx}=-5(1-3x)^{-6}\times-3$ $\bullet^2$ ✓ $\bullet^3$ ✓

$\frac{dy}{dx}=-15(1-3x)^{-6}$

Candidate B

$y=(1-3x)^{-5}$ $\bullet^1$ ✓

$\frac{dy}{dx}=-15(1-3x)^{-6}$ $\bullet^2$ ✓ $\bullet^3$ ✗

Candidate C

$y=(1-3x)^{-5}$ $\bullet^1$ ✓

$\frac{dy}{dx}=-5(1-3x)^{-6}\times-3$ $\bullet^2$ ✓ $\bullet^3$ ✗

Candidate D - differentiating over two lines

$y=(1-3x)^{-5}$ $\bullet^1$ ✓

$\frac{dy}{dx}=-5(1-3x)^{-6}$ $\bullet^2$ ✓ $\bullet^3$ ^

$\frac{dy}{dx}=15(1-3x)^{-6}$