f r q

$g(x) = \frac{5}{2}\ln x$

$g(x) = \ln(x^{5/2}), x > 0$

–OR–

$g(x) = 3\ln x - \frac{1}{2}\ln x$

$g(x) = \ln(x^3) - \ln(x^{1/2})$

$g(x) = \ln(\frac{x^3}{x^{1/2}})$

$g(x) = \ln(x^{5/2}), x > 0$

(ii) $h(x) = \frac{\sin^2 x - 1}{\cos x}$

$h(x) = \frac{-\cos^2 x}{\cos x}$

$h(x) = -\cos x, \cos x \neq 0$

23. Part B

The functions j and k are given by

$$j(x) = 2(\sin x)(\cos x) - \cos x$$

$$k(x) = 8e^{(3x)} - e.$$

(i) Solve $j(x) = 0$ for values of x in the interval $[0, \frac{\pi}{2}]$.

(ii) Solve $k(x) = 3e$ for values of x in the domain of k.

Part B

Select a point value to view scoring criteria, solutions, and/or examples to score the response.

0	1	2 ✓

The student response includes both of these criteria.

- Solutions to $j(x) = 0$
- Solution to $k(x) = 3e$

Model Solution