

4 Functions f and g are defined by

$$f : x \mapsto 2 - 3 \cos x \quad \text{for } 0 \leq x \leq 2\pi,$$

$$g : x \mapsto \frac{1}{2}x \quad \text{for } 0 \leq x \leq 2\pi.$$

(i) Solve the equation $fg(x) = 1$.

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(ii) Sketch the graph of $y = f(x)$.

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