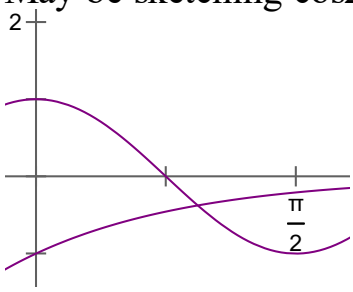
9(a)	Sketch a relevant graph, e.g. $y = \sec 2x$ May be sketching $\cos 2x$ and $-e^{-x}$  For $y = \sec 2x$ correct shape, asymptote in correct position. Cuts at (0, 1) For $-e^{x}$ correct shape, cuts at (0, 1) For $y = \cos 2x$ correct shape, correct max/min, cuts axis at $\frac{\pi}{4}$ For $-e^{-x}$ correct shape, cuts at (0, -1)
	Sketch a second relevant graph, e.g. $y = -e^{x}$ and justify the given statement
9(b)	Calculate the values of a relevant expression or pair of expressions at $x = 0.9$ and $x = 1$
	Complete the argument correctly with correct calculated values

9(c)	State the equation $x = \frac{1}{2}\cos^{-1}\left(-e^{-x}\right)$ and rearrange to obtain sec $2x = -e^{x}$ Or rearrange sec $2x = -e^{x}$ as $x = \frac{1}{2}\cos^{-1}\left(-e^{-x}\right)$ and state $x_{n+1} = \frac{1}{2}\cos^{-1}\left(-e^{-x_n}\right)$
9(d)	Use the iterative process correctly at least once
	Obtain final answer 0.978
	Show sufficient iterations to at least 5 d.p. to justify 0.978 to 3 d.p. or show there is a sign change in the interval (0.9775, 0.9785)

9(a)	Commence integration and reach $px^2 \ln x + q\int x\,\mathrm{d}x$
	Obtain $3x^2 \ln x - 3\int x\,\mathrm{d}x$
	Complete integration and obtain $3x^2 \ln x - \frac{3}{2}x^2$
	Use limits correctly in an expression of the form $ax^2 \ln x - bx^2$ and equate to 4, having integrated twice
	Obtain $a = \exp\left(\frac{1}{6}\left(\frac{5}{a^2}+3\right)\right)$ correctly
9(b)	Calculate the values of a relevant expression or pair of expressions at $a = 2$ and $a = 2.1$
	Justify the given statement with correct calculated values
9(c)	Use the iterative process $a_{n+1} = \exp\left(\frac{1}{6}\left(\frac{5}{a_n^{\ 2}}+3\right)\right)$ correctly at least once.
	Obtain final answer 2.02
	Show sufficient iterations to at least 4 d.p. to justify 2.02 to 2 d.p. or show that there is a sign change in $(2.015, 2.025)$

6(a)	Sketch a relevant graph for $0 < x < \pi$ For $y = \lvert x - 2 \rvert$ graph should be symmetrical and have correct intercepts on the axes For $y = 2\sin\frac{1}{2}x$, graph should pass through the origin, have correct curvature and max $y = 2$ when $x = \pi$
	Sketch second relevant graph and confirm root. The vertex of the modulus graph in roughly correct position relative to π and/or $\frac{1}{2}\pi$ If no mark on the graph, check to see if they have written something below the graph.

6(b)	Calculate the values of a relevant expression or pair of expressions at $x = 1$ and $x = 1.5$ e.g. $f(x) = \|x - 2\| - 2\sin\frac{1}{2}x$ $f(1) = 0.0411\ldots > 0$ $f(1.5) = -0.863\ldots < 0$ e.g. $f(x) = (x-2)^2 - 4\sin^2\left(\frac{1}{2}x\right) \Rightarrow f(1) = 0.0806..., f(1.5) = -1.60...$
	Complete the argument correctly with correct calculated values

6(c)	Use the iterative process correctly at least once starting at 1.03 (get as far as 1.0281)
	Obtain final answer 1.02
	Show sufficient iterations to 4 d.p. to justify 1.02 to 2 d.p. or show there is a sign change in the interval (1.015, 1.025) (or a smaller interval containing the root)