

Question number	Answer	Notes	Marks
2 (a) (i) (ii)	<p>Equal to</p> <p>Any TWO of -</p> <p>Rays continued and reflected correctly from mirror;</p> <p>Projected back behind mirror (to reasonably the right place)</p> <p>Line perpendicular to the mirror joining object and image positions (roughly equal distances in front and behind);</p>	<p>Judged by eye to be $i = r$ rays should diverge after reflection</p> <p>Judged by eye</p> <p>ACCEPT (for the second mark) projection back to image even if reflected rays not drawn in front of the mirror</p> <p>Rays do not need to have arrows</p> <p>Dotted lines no required behind mirror</p> <p>Image does not have to be labelled</p> <p>Accept dotted lines in front of mirror if meaning is clear</p> <p>Use of ruler not essential, but candidates will find it difficult to draw a convincing diagram freehand</p>	1 2
(iii)	'rays do not actually meet at the image'		1

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2 (b) (i)	Added to diagram - Reflection inside fibre; At least three (with reasonable angles);	Continuous path shown inside fibre	1
			1
	(ii) Must be more (optically) dense to less (optically) dense change; Angle of incidence > critical angle;	IGNORE angle of incidence = critical angle DO NOT ALLOW angle of incidence greater than 42°	1
	(iii) Any ONE sensible point – e.g. Less prone to noise; less prone to heating; send more information (per second); more data (per second);		1
		Total	9