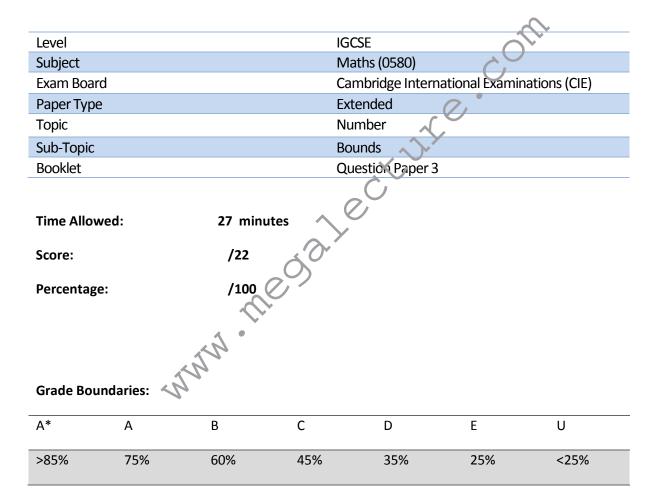


## **Bounds**

## **Question Paper 3**



1 (a In Portugal, Miguel buys a book about planets. The book costs  $\notin 34.95$ . In England the same book costs  $\pounds 27.50$ . The exchange rate is  $\pounds 1 = \notin 1.17$ .

Calculate the difference in pounds (£) between the cost of the book in Portugal and England.

Answer(a) £ [2]

(b) In the book, the distance between two planets is given as  $4.07 \times 10^{12}$  kilometres. The speed of light is  $1.1 \times 10^9$  kilometres per hour.

Calculate the time taken for light to travel from one of these planets to the other. Give your answer in days and hours.

Answer(b) days hours [3]

- (c) In one of the pictures in the book, a rectangle is drawn. The rectangle has length 9.3 cm and width 5.6 cm, both correct to one decimal place.
  - (i) What is the lower bound for the length?

*Answer(c)*(i) cm [1]

(ii) Work out the lower and upper bounds for the area of the rectangle.

Answer(c)(ii) Lower bound =  $cm^2$ 

Upper bound = \_\_\_\_\_ cm<sup>2</sup> [2]
www.youtube.com/megalecture

- 2 (a  $72 = 2 \times 2 \times 2 \times 3 \times 3$  written as a product of prime factors.
  - (i) Write the number 126 as a product of prime factors.

	Answer(a)(i) 126 =		[2]
(ii)	Find the value of the highest common factor of 72 and 126.		
		coff	
	Answer(a)(A)		[1]
(iii)	Find the value of the lowest common multiple of 72 and 126.		
	a lect		
	Answer(a)(iii)		[2]
	S.		

(b) John wants to estimate the value of  $\pi$ .

He measures the circumference of a circular pizza as 105 cm and its diameter as 34 cm, both correct to the nearest centimetre.

Calculate the lower bound of his estimate of the value of  $\pi$ . Give your answer correct to 3 decimal places.

*Answer(b)* [4]

(c) The volume of a cylindrical can is  $550 \text{ cm}^3$ , correct to the nearest  $10 \text{ cm}^3$ . The height of the can is 12 cm correct to the nearest centimetre.

Calculate the upper bound of the radius of the can. Give your answer correct to 3 decimal places.

Answer(c) cm [5]