

Maths in Context

Part 1 : Download a Specification

<http://qualifications.pearson.com/en/qualifications/edexcel-mathematics-in-context/mathematics-in-context.html>

Part 2 : Making Notes

Answer these questions and bring your answers to your first maths lesson: (You may need to search on the internet if you do not readily know how to do them.)

1 Sequences

Question 1 Write the next two terms of the sequence 3, 7, 13, 21, 31... (2)

Question 2 Write the first 5 terms of the sequence which has the n th term formula of $2n-3$ (2)

Question 3 Find the 500th term of the sequence 4, 7, 10, 13, 16... (3)

Question 4 Find the 500th term of the sequence 4, 6, 10, 16, 24... (3)

Total ___/ 10

2 Linear Programming

Question 1 A furniture factory makes tables and chairs. The number of tables(t) and chairs(c) made in a week must total at least 40. Write this as an inequality. (2)

Question 2 The cost to manufacture each chair is £15. The cost for each table is £35. The total available for manufacturing is £100. Write this as an inequality. (3)

Question 3 Draw the following graphs on a set of axes where $0 \leq t \leq 40$ and $0 \leq c \leq 40$.
(a) $t > 10$ (b) $c > 5$ (c) $t + c \leq 40$ (d) $3c + 7t \leq 20$ (e) $c > t$ (5)

Total ___/ 10

3 Compound Interest

Question 1 Calculate the value of a painting which has a starting value of £35m and rises in price by 8% AER for 3 years (2)

Question 2 Calculate the value of a car which has a starting value of £32,000 and depreciates in price by 6% AER for 8 years (3)

Question 3 An item is bought for £345 and resold for £543. Calculate the percentage profit. (2)

Question 4 A flat rises from £40k at a constant rate over 4 years to £58k. Calculate the % AER. (3)

Total ___/ 10

Maths in Context

4 Tree Diagrams

Question 1 Amy is going to play one game of snooker and one game of billiards. The probability that she will win the game of snooker is $\frac{3}{4}$. The probability that she will win the game of billiards is $\frac{1}{3}$. Draw this information on a tree diagram (2)

Question 2 Calculate the probability that Amy wins at least one of her games (3)

Question 3 A bag holds 3 green and 4 red sweets. Two sweets are removed one after the other without replacement. Calculate the probability at least one of the sweets is red. (5)

Total ___/ 10

5 Grouped Frequency

Question 1 Draw a cumulative frequency diagram of the following data and use it to calculate the interquartile range (5)

Marks (x)	Frequency
$0 \leq x < 20$	6
$20 \leq x < 30$	17
$30 \leq x < 40$	22
$40 \leq x < 50$	45
$50 \leq x < 60$	26
$60 \leq x < 70$	19
$70 \leq x < 80$	9
$80 \leq x < 100$	6

Question 2 Calculate the mean number of marks (4)

Question 3 Write down the modal class (1)

Total ___/ 10

6 Histograms

Question 1 The table below shows the distribution of the ages of passengers travelling on a plane from London to Belfast. Draw a histogram to show this distribution on graph paper. (5)

Age (x years)	Frequency
$0 < x \leq 20$	28
$20 < x \leq 35$	36
$35 < x \leq 45$	20
$45 < x \leq 65$	30

Calculate how many people were aged 41 or below (5)

Total ___/ 10

Maths in Context

Part 3 : Exam Style Questions

Data source D

Jury member selection criteria

All jury members are music professionals. They are being asked to judge:

- vocal capacity
- the performance on stage
- the composition and originality of the song
- the overall impression made by the act.

The average age of the jury members across Europe is 40 years old, 79 members are female, 106 are male.

Jury members signed a declaration stating they will vote independently.

Calculate the total sum of the ages of the jury members across Europe.

(2)

Find the percentage of the jury members that are female.

(2)

Part 4: Extension Work

Go to methodmaths.com/login and use your login to complete as many of the OLDER TEST PAPERS as you can.