Write your name and class in the boxes below before you start.

Candidate surname	Other names

Class	Teacher	Date

DNEP Education
Year 8 · All sets · Maths Assessment

Time: **60 minutes**

Paper reference

DNEP/SAMPLE-Y8

Mathematics

ASSESSMENT PAPER — NEW QUESTIONS

Key Stage 3

Questions written for DNEP Education in the style of KS3 SATs, Pearson Edexcel GCSE 1MA1 papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator (only for questions marked Calculator allowed). Tracing paper may be used.

Total Marks

/ 50

Topics in this paper

Topic (lesson)	Questions	Marks
Forming and Solving Equations	1, 3, 8	6
Fractions	2, 4, 9	7
Inequalities	5, 10, 12	9
Percentages	6, 14, 16	10
Expansion and Factorisation	7, 15	6
Ratio, Proportion and Scaling	11, 13, 17	12
		Total 50

Instructions

- Use black ink or ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page with your name, class, teacher and the date.
- Answer all questions in the spaces provided — there may be more space than you need.
- You must show all your working.
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- Use a calculator only on questions marked Calculator allowed. Questions marked Non-calculator must be done without one.

Information

- The total mark for this paper is 50.
- The marks for each question are shown in brackets — use this as a guide to how much time to spend on each question.
- When you have finished, mark your answers with your teacher and complete the RAG feedback page at the back.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

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Question 1 · Calculator allowed

1 (a) Simplify a × a × 8

.....

(1)

(b) Simplify 5 × r × 5 × s

.....

(1)

(Total for Question 1 is 2 marks)

Question 2 · Non-calculator

2 Work out $4\frac{1}{2} \div 2\frac{3}{4}$

Give your answer as a mixed number.

.....

(3)

(Total for Question 2 is 3 marks)

Question 3 · Calculator allowed

3 Solve 5(m − 3) = 45

.....

(2)

(Total for Question 3 is 2 marks)

Question 4 · Calculator allowed

4 Write the following fractions in order of size. Start with the smallest fraction.

$\frac{1}{2}, \frac{3}{4}, \frac{7}{12}, \frac{1}{6}$

.....

(2)

(Total for Question 4 is 2 marks)

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Question 5 · Calculator allowed

5 Solve $\frac{x + 6}{2} \geq 4$

.....

(3)

(Total for Question 5 is 3 marks)

Question 6 · Non-calculator

6 Write the missing values.

10% of 168 = ☐

5% of 168 = ☐

$2\frac{1}{2}$% of 168 = ☐

(3)

(Total for Question 6 is 3 marks)

Question 7 · Non-calculator

7 Write the number or term that goes in each box.

(a) $21x - 6 =$ ☐ $(7x - 2)$

(1)

(b) $4(p +$ ☐ $) = 4p + 12$

(1)

(c) $21n^2 - 27n = 3n($ ☐ $- 9)$

(1)

(Total for Question 7 is 3 marks)

DO NOT WRITE IN THIS AREA

Question 8 · Non-calculator

8 Write each expression in its simplest form.

(a) 5t + 2t + 11

.....

(1)

(b) 2b + 6 + 3b + 12

.....

(1)

(Total for Question 8 is 2 marks)

Question 9 · Non-calculator

9 Work out $\frac{1}{3} - \frac{1}{9}$

Give your answer in its simplest form.

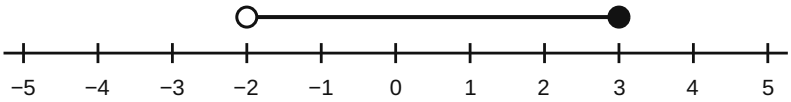
.....

(2)

(Total for Question 9 is 2 marks)

Question 10 · Calculator allowed

10 Here is a number line.



(a) Write down the inequality shown on this number line.

.....

(1)

(b) $-1 \leq n < 3$

n is an integer.

Write down the greatest possible value of n.

.....

(1)

(Total for Question 10 is 2 marks)

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Question 11 · Calculator allowed

11 A map has a scale of 1 : 40 000

A road is 8.8 km long.
Work out the length of the road on the map. Give your answer in centimetres.

..... cm

(3)

(Total for Question 11 is 3 marks)

Question 12 · Non-calculator

12 The diagram shows a rectangle.
The perimeter of the rectangle is less than 59 cm.

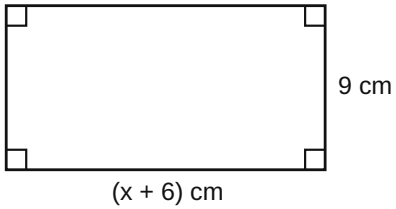


Diagram NOT accurately drawn

(a) Show that $2x + 30 < 59$

(2)

(b) x is a whole number.
Work out the greatest possible value of x.

.....

(2)

(Total for Question 12 is 4 marks)

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Question 13 · Calculator allowed

13 There are 67 calories in 100 g of grapes.
There are 92 calories in 100 g of yogurt.
Kofi has 170 g of grapes and 120 g of yogurt for breakfast.

(a) Work out the total number of calories in this food.

.....

(4)

(b) Kofi wants to eat fewer than 150 calories at breakfast.
Does Kofi manage this? Give a reason.

.....

(1)

(Total for Question 13 is 5 marks)

Question 14 · Calculator allowed

14 There are 1200 people at a concert.
26% of the people are wearing hats.
80% of the people are adults.
75% of the adults are not wearing hats.

How many children are wearing hats?
You must show all your working.

.....

(4)

(Total for Question 14 is 4 marks)

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Question 15 · Calculator allowed

15 Barry has seven more counters than Ali. Cindy has four times as many counters as Ali.

(a) Ali calls the number of counters in Ali's bag a. Write expressions using a for the number of counters in Barry's bag and in Cindy's bag.

.....

(1)

(b) Barry calls the number of counters in Barry's bag b. Write expressions using b for the number of counters in Ali's bag and in Cindy's bag.

.....

(2)

(Total for Question 15 is 3 marks)

Question 16 · Calculator allowed

16 After a decrease of 10%, the price of a TV is £171.90.
Work out the price of a TV before the decrease.

.....

(3)

(Total for Question 16 is 3 marks)

Question 17 · Calculator allowed

17 In a club, the ratio of the number of boys to the number of girls is 3 : 4.
$\frac{2}{3}$ of the boys and $\frac{1}{4}$ of the girls walk to the club.
12 members walk to the club.
How many members are there in the club?

.....

(4)

(Total for Question 17 is 4 marks)

TOTAL FOR PAPER IS 50 MARKS

Now mark your paper and complete the RAG feedback page overleaf.

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Your results and next steps (RAG feedback)

Mark your paper with the mark scheme. Write your mark for each question, then colour one circle: GREEN = full marks · AMBER = some marks · RED = no marks. Use the topic table to decide which lessons to revisit.

Q	Topic (lesson)	Calc?	Marks	My mark	R A G
1	Forming and Solving Equations	Yes	2		○ ○ ○
2	Fractions	No	3		○ ○ ○
3	Forming and Solving Equations	Yes	2		○ ○ ○
4	Fractions	Yes	2		○ ○ ○
5	Inequalities	Yes	3		○ ○ ○
6	Percentages	No	3		○ ○ ○
7	Expansion and Factorisation	No	3		○ ○ ○
8	Forming and Solving Equations	No	2		○ ○ ○
9	Fractions	No	2		○ ○ ○
10	Inequalities	Yes	2		○ ○ ○
11	Ratio, Proportion and Scaling	Yes	3		○ ○ ○
12	Inequalities	No	4		○ ○ ○
13	Ratio, Proportion and Scaling	Yes	5		○ ○ ○
14	Percentages	Yes	4		○ ○ ○
15	Expansion and Factorisation	Yes	3		○ ○ ○
16	Percentages	Yes	3		○ ○ ○
17	Ratio, Proportion and Scaling	Yes	4		○ ○ ○
			Total 50		= _____ %

By topic

Topic (lesson)	Questions	My marks	R A G
Forming and Solving Equations	1, 3, 8	____ / 6	○ ○ ○
Fractions	2, 4, 9	____ / 7	○ ○ ○
Inequalities	5, 10, 12	____ / 9	○ ○ ○
Percentages	6, 14, 16	____ / 10	○ ○ ○
Expansion and Factorisation	7, 15	____ / 6	○ ○ ○
Ratio, Proportion and Scaling	11, 13, 17	____ / 12	○ ○ ○

What went well (my GREEN topics)

Even better if (my RED / AMBER topics)

Lessons I will revisit (lesson numbers) and how:

Teacher comment

Signed: _____