Name ANSWERS | Class

MATHS TEACHER HUB

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Solving inequalities

(9 – 1) Topic booklet

Foundation

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a **1F** question you are not allowed to use a calculator.
- If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

Information

- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

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.

Answer ALL questions
Write your answers in the space provided.
You must write down all the stages in your working.

19 Solve $3x + 5 \geqslant x + 17$

$3x + 5 \geqslant x + 17$

$-x \quad -x$

$2x + 5 \geqslant 17$

$-5 \quad -5$

$2x \geqslant 12$

$x \geqslant 6$

$x \geqslant 6$

(3)

November 2018 – Paper 3F

(Total for Question 19 is 3 marks)

20 Solve $14n > 11n + 6$

$14n > 11n + 6$

$-11n \quad -11n$

$3n > 6$

$n > 2$

$n > 2$

(2)

June 2019 – Paper 2F

(Total for Question 20 is 2 marks)

20 Solve the inequality $4y + 7 < 16$

$-7 \mid 4y + 7 < 16 \mid -7$

$4y < 9$

$y \leq \frac{9}{4}$

$y < 2.25$

(2)

Specimen 2 – Paper 3F **(Total for Question 20 is 2 marks)**

23 Solve $7x - 27 < 8$

$+27 \mid 7x - 27 < 8 \mid +27$

$7x < 35$

$x < 5$

$x < 5$

June 2022 – Paper 1F **(Total for Question 23 is 2 marks)**

23 Solve $\frac{2}{5}g - 4 < 6$

$\frac{2}{5}g - 4 < 6$

+4 | +4

$\frac{2}{5}g < 10$

×5 | ×5

$2g < 50$

$g < 25$

$g < 25$

(3)

June 2023 – Paper 2F

(Total for Question 23 is 3 marks)

23 Solve $\frac{5x}{2} > 7$

$\frac{5x}{2} > 7$

×2 | ×2

$5x > 14$

$x > \frac{14}{5}$

$x > 2.8$

(2)

May 2020 – Paper 3F

(Total for Question 23 is 2 marks)

26 Solve $\frac{5x}{2} + 3 > 18$

$\frac{5x}{2} + 3 > 18$

-3 $\quad -3$

$\frac{5x}{2} > 15$

$\times 2$ $\quad \times 2$

$5x > 30$

$x > 6$

$x > 6$

(3)

November 2022 – 1F

(Total for Question 26 is 3 marks)

28 Solve $x + 11 \leqslant 5 - \frac{1}{2}x$

$x + 11 \leqslant 5 - \frac{1}{2}x$

$+\frac{1}{2}x$ $\quad +\frac{1}{2}x$

$1.5x + 11 \leqslant 5$

-11 $\quad -11$

$1.5x \leqslant -6$

$3x \leqslant -12$

$x \leqslant -4$

$x \leqslant -4$

May 2024 – Paper 1F

(Total for Question 28 is 3 marks)