Name ANSWERS	Class

MATHS TEACHER HUB

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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.

3 Write down a number that is less than –5

-10

November 2024 – Paper 3F **(Total for Question 3 is 1 mark)**

10 Here are three symbols.

<	>	=

Write one of these symbols in each box to make four true statements.

14 [<] 21

4 + 7 [=] 103 − 92
11 11

2^2 [=] 2 × 2
4 4

−3 [>] −5

June 2019 – Paper 2F **(Total for Question 10 is 2 marks)**

14 The box below contains three mathematical symbols.

=	<	>

From the box, choose a symbol to make each of the following statements correct.

(i) $\frac{5}{8}$ ..... $\frac{2}{8}$

(1)

(ii) -2×-3 ..... $-3 + 9$

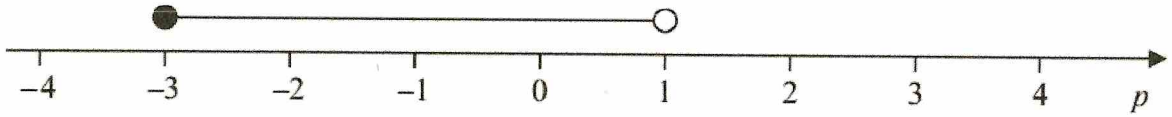
6 6

(1)

June 2022 – Paper 2F

(Total for Question 14 is 2 marks)

19 Here is a number line.



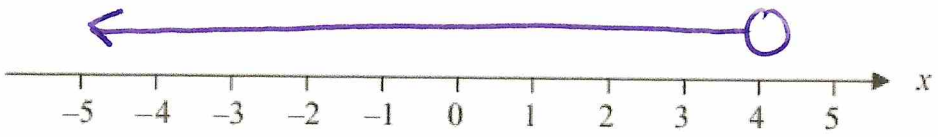
Write down the inequality shown on the number line.

$-3 \leqslant p < 1$

November 2019 – Paper 1F

(Total for Question 19 is 2 marks)

19 (a) On the number line, show the inequality $x < 4$



(2)

$3 < y \leqslant 7$ where y is an integer.

(b) Write down all the possible values of y.

4, 5 6, 7

(2)

(c) Solve $3x + 5 \geqslant x + 17$

$2x + 5 \geqslant 17$

$2x \geqslant 12$

$x \geqslant 6$

$x \geqslant 6$

(3)

(Total for Question 19 is 7 marks)

19 $-3 < t \leqslant 2$
t is an integer.

Write down all the possible values of t.

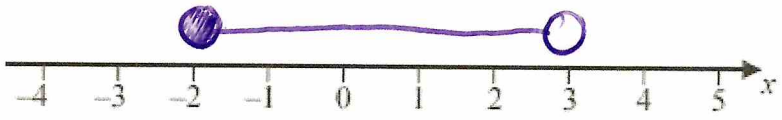
-2, -1, 0, 1, 2,

(2)

June 2017 – Paper 1F

(Total for Question 19 is 2 marks)

20 (a) Show the inequality $-2 \leqslant x < 3$ on the number line below.



(2)

(b) Solve the inequality $4y + 7 < 16$

$4y < 11$

$y < \frac{11}{4}$

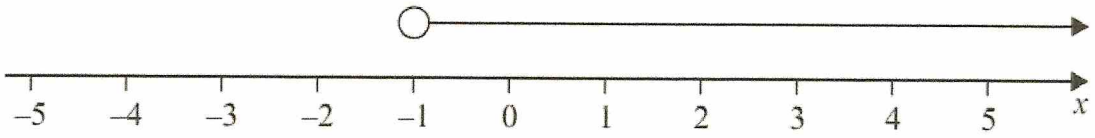
$y < 2\frac{3}{4}$

(2)

Specimen 2 – Paper 3F

(Total for Question 20 is 4 marks)

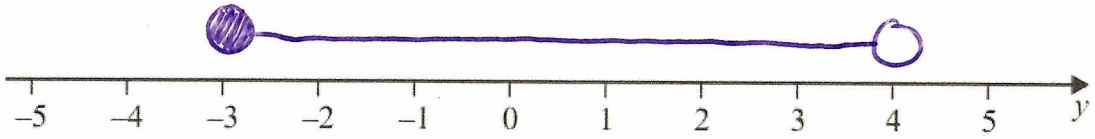
21 (a) Write down the inequality shown on this number line.



$x > -1$

(1)

(b) On the number line below, show the inequality $-3 \leqslant y < 4$

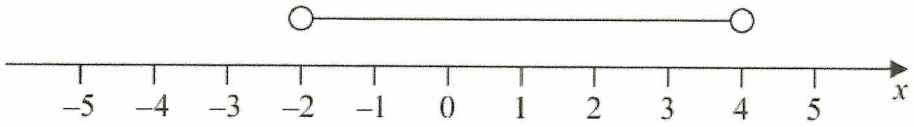


(2)

(Total for Question 21 is 3 marks)

23 Jenna is asked to show the inequality $-3 < x \leqslant 4$ on a number line.

Here is her answer.



(a) Write down two mistakes Jenna has made.

1 4 should be a solid circle

2 Plotted at -2 instead of -3

(2)

(b) Work out the greatest integer that satisfies the inequality

$$5y - 7 < 16$$

$5y < 23$

$y < \frac{23}{5}$

$y < 4\frac{3}{5}$

(2)

(Total for Question 23 is 4 marks)

23 $-2 \leqslant n < 5$

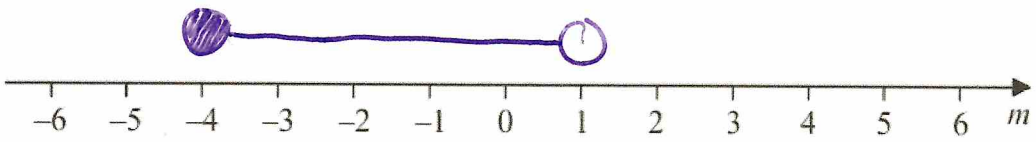
n is an integer.

(a) Write down the greatest possible value of n.

4

(1)

(b) On the number line below, show the inequality $-4 \leqslant m < 1$



(2)

(c) Solve $\frac{2}{5}g - 4 < 6$

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

$2g < 50$

$g < 25$

$g < 25$

(3)

(Total for Question 23 is 6 marks)