

# Inequalities on a Number Line

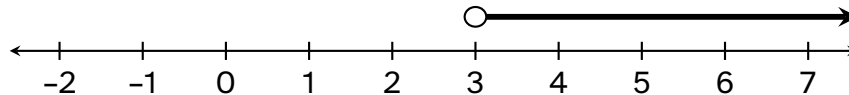
For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation tier

Name \_\_\_\_\_

Total marks: **25**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

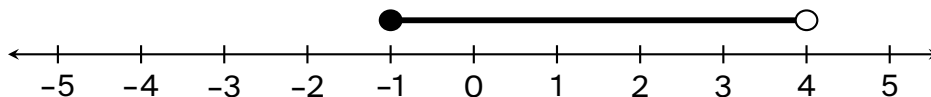
- 1** Write down the inequality shown on this number line.



.....  
(1)

**(Total for Question 1 is 1 mark)**

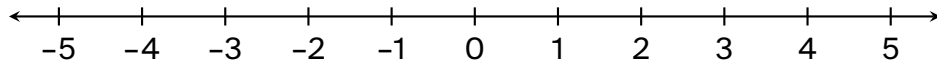
- 2** Write down the inequality shown on this number line.



.....  
(2)

**(Total for Question 2 is 2 marks)**

- 3 On the number line below, show the inequality  $-4 < t \leq 1$

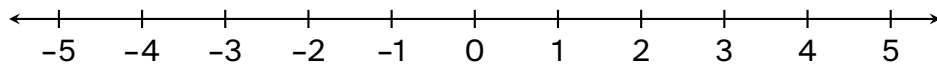


(2)

(Total for Question 3 is 2 marks)

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- 4 On the number line below, show the inequality  $x < 1$



(1)

(Total for Question 4 is 1 mark)

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- 5  $n$  is an integer.

$$-4 < n \leq 1$$

Write down every possible value of  $n$ .

.....

(2)

(Total for Question 5 is 2 marks)

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- 6 (a) Write down the smallest integer that satisfies  $x > -4$

.....  
(1)

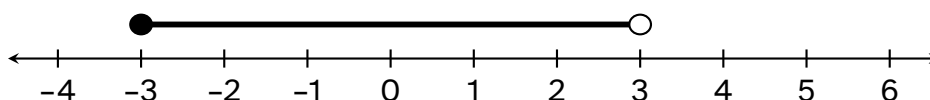
- (b) Write down the largest integer that satisfies  $x < 2.5$

.....  
(1)

**(Total for Question 6 is 2 marks)**

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- 7 The number line shows the values of  $w$  that satisfy an inequality.



$w$  is an integer.

Write down all the possible values of  $w$ .

.....  
(2)

**(Total for Question 7 is 2 marks)**

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- 8 Write down an inequality that has exactly three integer solutions: 4, 5 and 6

.....  
(1)

**(Total for Question 8 is 1 mark)**

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- 9  $x$  and  $y$  are integers.

$$1 \leq x < 4 \quad -2 < y \leq 1$$

Work out the greatest possible value of  $x - y$

.....  
(2)

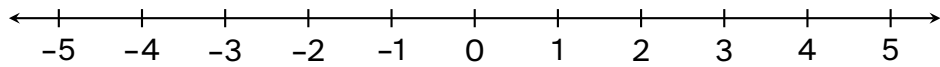
**(Total for Question 9 is 2 marks)**

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**10** Here are two inequalities.

$$x > -2 \qquad x \leq 3$$

- (a) On the number line below, show the set of values of  $x$  that satisfy **both** inequalities.



(2)

- (b) How many integers satisfy both inequalities?

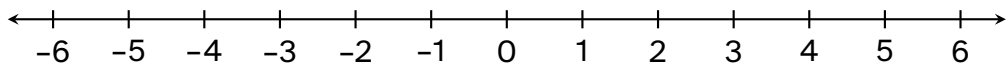
.....  
(1)

**(Total for Question 10 is 3 marks)**

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**11** Solve  $-5 < 2x + 1 \leq 7$

Show your solution on the number line below.



(3)

**(Total for Question 11 is 3 marks)**

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- 12** Priya thinks of an integer,  $n$ .  
She multiplies  $n$  by 3 and then adds 8.  
Her answer is less than 30.

(a) Work out the greatest possible value of  $n$ .

.....  
(2)

(b) Priya's integer also satisfies the inequality  $2n > 7$   
Write down all the possible values of  $n$ .

.....  
(2)

**(Total for Question 12 is 4 marks)**

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