INEQUALITIES

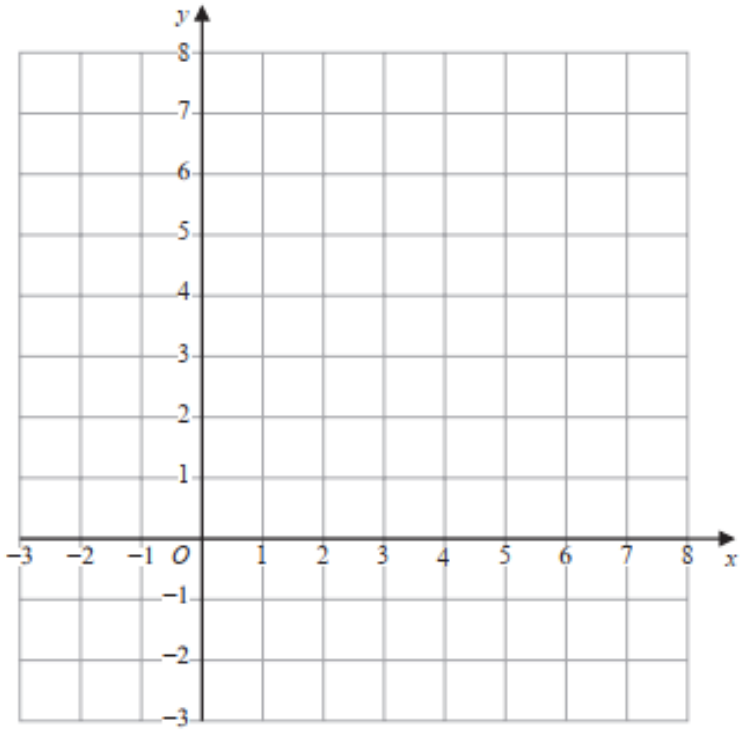
Pearson Edexcel – Monday 8 June 2020 - Paper 3 (Calculator) Higher Tier

1.

13 (a) On the grid show, by shading, the region that satisfies all these inequalities.

$x \geqslant 0$ $x \leqslant 2$ $y \leqslant x + 3$ $2x + 3y \geqslant 6$

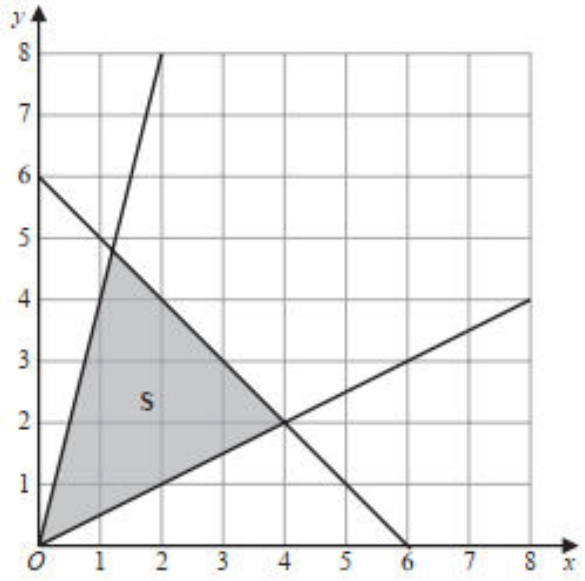
Label the region **R**.



(4)

(b) The diagram below shows the region S that satisfies the inequalities

$y \leqslant 4x$ $y \geqslant \frac{1}{2}x$ $x + y \leqslant 6$



Geoffrey says that the point with coordinates (2, 4) does not satisfy all the inequalities because it does not lie in the shaded region.

Is Geoffrey correct?
You must give a reason for your answer.

.....

.....

.....

(1)

(Total for Question 13 is 5 marks)

Pearson Edexcel - Thursday 6 June 2019 - Paper 2 (Calculator) Higher Tier

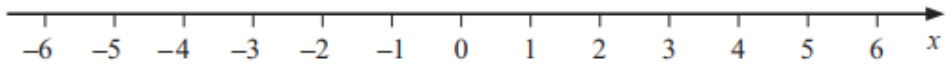
2.

1 (a) Solve $14n > 11n + 6$

.....

(2)

(b) On the number line below, show the set of values of x for which $-2 < x + 3 \leqslant 4$



(3)

(Total for Question 1 is 5 marks)

Pearson Edexcel - Thursday 8 November 2018 - Paper 2 (Calculator) Higher Tier

3.

19 Solve $22 < \frac{m^2 + 7}{4} < 32$

Show all your working.

.....

(Total for Question 19 is 5 marks)

Pearson Edexcel - Thursday 24 May 2018 - Paper 1 (Non-Calculator) Higher Tier

4.

20 n is an integer such that $3n + 2 \leqslant 14$ and $\frac{6n}{n^2 + 5} > 1$

Find all the possible values of n.

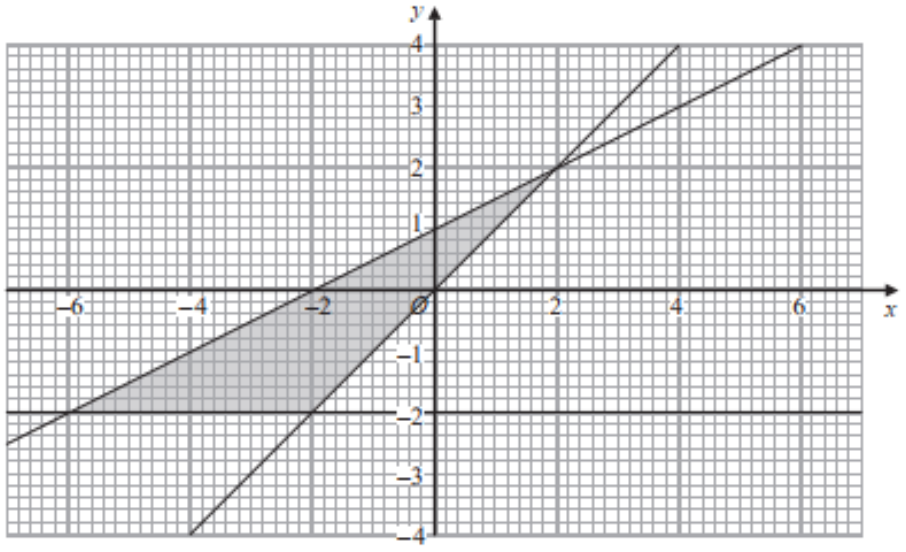
.....

(Total for Question 20 is 5 marks)

Pearson Edexcel - Tuesday 13 June 2017 - Paper 3 (Calculator) Higher Tier

5.

13



Write down the three inequalities that define the shaded region.

.....

.....

.....

(Total for Question 13 is 4 marks)

Pearson Edexcel - Tuesday 13 June 2017 - Paper 3 (Calculator) Higher Tier

6.

19 Solve $2x^2 + 3x - 2 > 0$

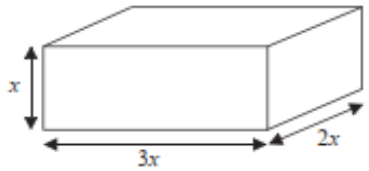
.....

(Total for Question 19 is 3 marks)

Pearson Edexcel - Specimen Papers Set 2 - Paper 1 (Non-Calculator) Higher Tier

7.

9 Here is a cuboid.



All measurements are in centimetres.
x is an integer.
The total volume of the cuboid is less than 900 cm^3

Show that $x \leqslant 5$

(Total for Question 9 is 3 marks)

Pearson Edexcel - Specimen Papers Set 2 - Paper 1 (Non-Calculator) Higher Tier

8.

21 Solve the inequality $x^2 > 3(x + 6)$

.....

(Total for Question 21 is 4 marks)

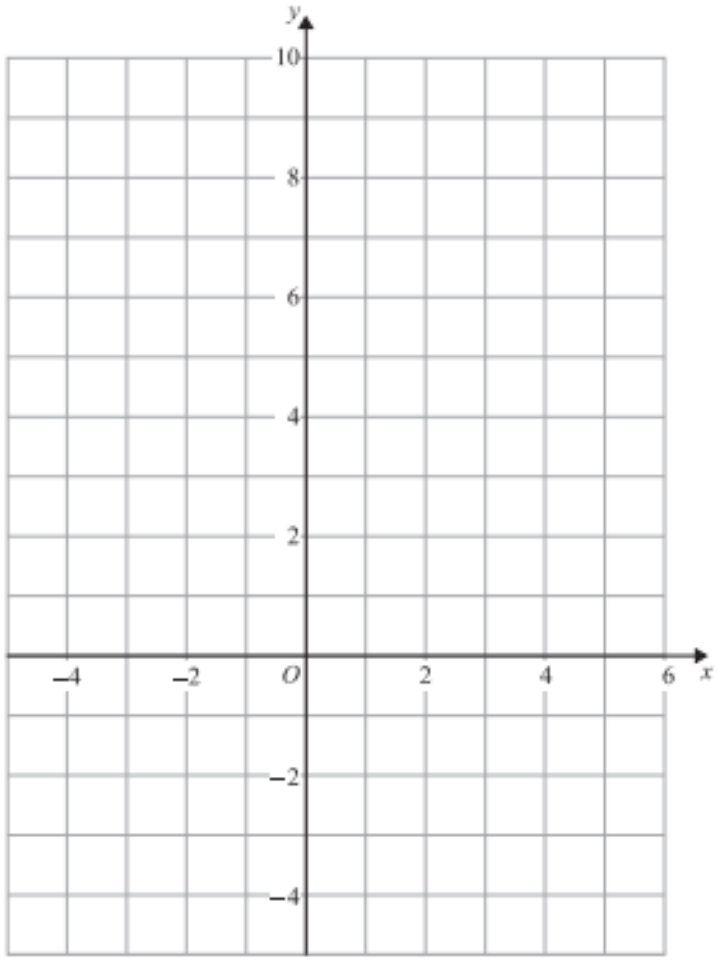
Pearson Edexcel - Specimen Papers Set 1 - Paper 3 (Calculator) Higher Tier

9.

10 On the grid, shade the region that satisfies all these inequalities.

$x + y < 4$ $y > x - 1$ $y < 3x$

Label the region **R**.



(Total for Question 10 is 4 marks)

Pearson Edexcel - Sample Paper 1 - (Non-Calculator) Higher Tier

10.

19 Solve $x^2 > 3x + 4$

.....

(Total for Question 19 is 3 marks)

Pearson Edexcel - Sample Paper 3 - (Calculator) Higher Tier

11.

9 (a) Factorise $y^2 + 7y + 6$

.....

(2)

(b) Solve $6x + 4 > x + 17$

.....

(2)

(c) n is an integer with $-5 < 2n \leqslant 6$

Write down all the values of n

.....

(2)

(Total for Question 9 is 6 marks)

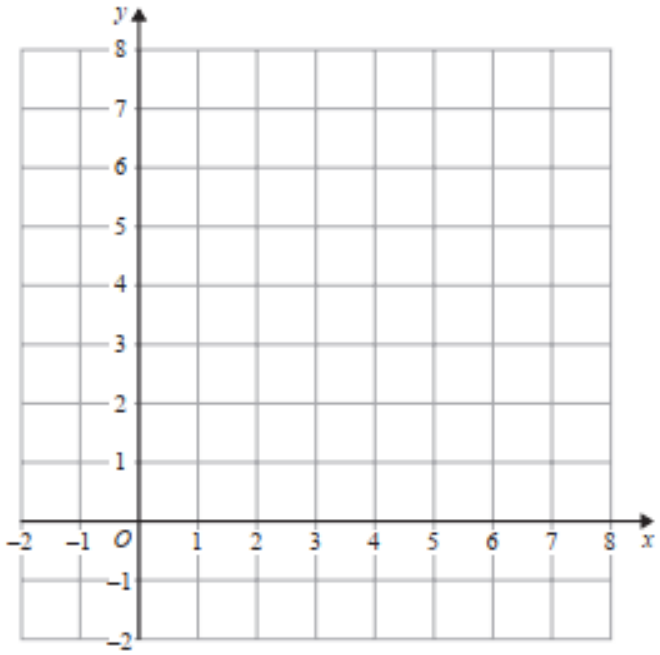
Pearson Edexcel - Thursday 4 June 2015 - Paper 1 (Non-Calculator) Higher Tier

12.

18 On the grid show, by shading, the region that satisfies all three of the inequalities

$x + y < 7$ $y < 2x$ $y > 3$

Label the region **R**.



(Total for Question 18 is 4 marks)

Pearson Edexcel - Wednesday 5 November 2014 - Paper 1 (Non-Calculator) Higher Tier

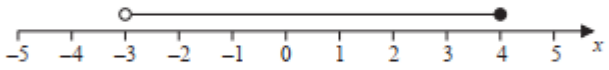
13.

5 (a) Solve the inequality $6y + 5 > 8$

.....

(2)

(b) Here is an inequality, in x, shown on a number line.



Write down the inequality.

.....

(2)

(Total for Question 5 is 4 marks)

Pearson Edexcel - Friday 13 June 2014 - Paper 2 (Calculator) Higher Tier

14.

13 $-5 < y \leqslant 0$

y is an integer.

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

.....

(2)

(b) Solve $6(x - 2) > 15$

.....

(2)

(Total for Question 13 is 4 marks)

Pearson Edexcel - Tuesday 11 June 2013 - Paper 1 (Non-Calculator) Higher Tier

15.

14 $-2 < n \leqslant 3$

(a) Represent this inequality on the number line.

(2)

(b) Solve the inequality $8x - 3 \geqslant 6x + 4$

.....

(2)

(Total for Question 14 is 4 marks)

Pearson Edexcel - Monday 4 March 2013 - Paper 2 (Calculator) Higher Tier

16.

12 $-3 < n \leqslant 1$

n is an integer.

(a) Write down all the possible values of n.

.....

(2)

(b) Solve the inequality $3p - 7 > 11$

.....

(2)

(Total for Question 12 is 4 marks)

Pearson Edexcel - Thursday 8 November 2012 - Paper 2 (Calculator) Higher Tier

17.

8 (a) n is an integer.

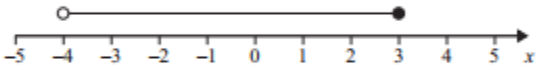
$-1 \leqslant n < 4$

List the possible values of n.

.....

(2)

(b)



Write down the inequality shown in the diagram.

.....

(2)

(c) Solve $3y - 2 > 5$

.....

(2)

(Total for Question 8 is 6 marks)

Pearson Edexcel - Wednesday 13 June 2012 - Paper 2 (Calculator) Higher Tier

18.

10 m is an integer such that $-2 < m \leqslant 3$

(a) Write down all the possible values of m.

.....

(2)

(b) Solve $7x - 9 < 3x + 4$

.....

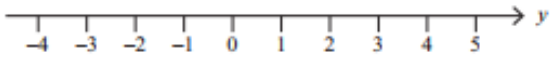
(2)

(Total for Question 10 is 4 marks)

Pearson Edexcel - Monday 5 March 2012 - Paper 4 (Calculator) Higher Tier

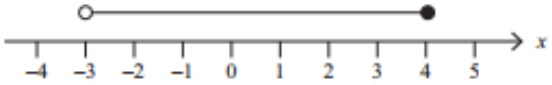
19.

11. (a) On the number line below, show the inequality $-2 < y < 3$



(1)

(b) Here is an inequality, in x, shown on a number line.



Write down the inequality.

.....

(2)

(c) Solve the inequality $4t - 5 > 9$

.....

(2)

(Total 5 marks)

Pearson Edexcel - Monday 14 November 2011 - Paper 4 (Calculator) Higher Tier

20.

12. $-2 \leqslant n < 5$
n is an integer.

(a) Write down all the possible values of n.

.....

(2)

(b) Solve the inequality $4x + 1 > 11$

.....

(2)

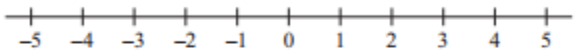
(Total 4 marks)

Pearson Edexcel - Friday 10 June 2011 - Paper 4 (Calculator) Higher Tier

21.

15. (a) $x > -3$

Show this inequality on the number line.



(2)

(b) Solve the inequality $7y + 36 \leqslant 8$

.....

(2)

(Total 4 marks)

Pearson Edexcel - Friday 12 November 2010 - Paper 4 (Calculator) Higher Tier

22.

10. $-3 < k \leqslant 2$
k is an integer.

(a) Write down all the possible values of k.

.....

(2)

(b) Solve the inequality $\frac{2x}{3} < 10$

.....

(2)

(Total 4 marks)

Pearson Edexcel - Friday 11 June 2010 - Paper 4 (Calculator) Higher Tier

23.

15. $-4 < n \leqslant 1$
n is an integer.

(a) Write down all the possible values of n.

.....

(2)

(b) Solve $3x - 2 > x + 7$

.....

(2)

(Total 4 marks)

Pearson Edexcel - Thursday 5 November 2009 - Paper 3 (Non-Calculator) Higher Tier

24.

15. k is an integer such that $-1 \leqslant k < 3$

(a) List all the possible values of k.

.....

(2)

(b) Solve the inequality $6y \geqslant y + 10$

.....

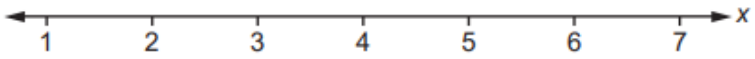
(2)

(Total 4 marks)

OCR GSCE – Monday 9 November 2020 – Paper 6 (Calculator) Higher Tier

25.

2 Solve $3x + 4 < 19$.
Show your solution on the number line.

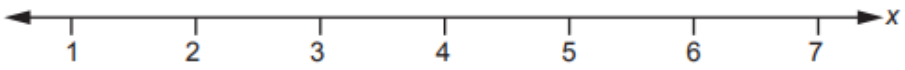


[4]

OCR GSCE – Monday 11 November 2019 – Paper 6 (Calculator) Higher Tier

26.

1 Solve $3x - 5 \geqslant 10$.
Show your solution on the number line.

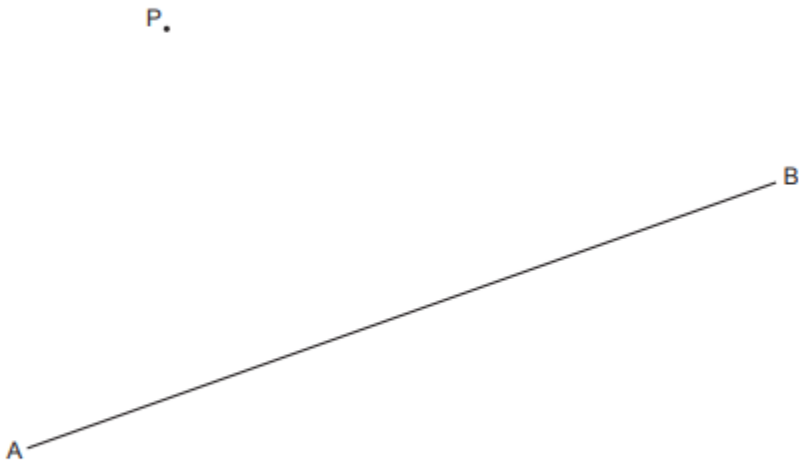


[4]

OCR GSCE – Tuesday 11 June 2019 – Paper 6 (Calculator) Higher Tier

27.

7 Construct the perpendicular from the point P to the line AB.
Show all of your construction lines.

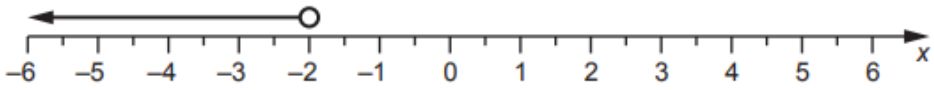


[2]

OCR GSCE – Thursday 7 June 2018 – Paper 5 (Non - Calculator) Higher Tier

28.

2 Gemma's solution to the inequality $3x + 1 > -5$ is shown on the number line.



Is Gemma's solution correct?
Explain your reasoning.

..... **[3]**

OCR GSCE – Tuesday 6 November 2017 – Paper 5 (Non - Calculator) Higher Tier

29.

17 Solve the inequality.

$$x^2 - 5x - 6 \leqslant 0$$

..... **[4]**

OCR GSCE – Thursday 8 June 2017 – Paper 5 (Non - Calculator) Higher Tier

30.

10 (a) Solve the inequality.

$3x - 2 > 10$

(a) ..... **[2]**

(b) Solve.

$6x + 2 = 5 - 4x$

(b) $x =$ ..... **[3]**

OCR GSCE – Sample Papers – Paper 5 (Non - Calculator) Higher Tier

31.

20 **(a)** Find the interval for which $x^2 - 7x + 10 \leqslant 0$.

(a) ..... $\leqslant x \leqslant$ ..... **[3]**

(b) The point $(^-3, ^-4)$ is the turning point of the graph of $y = x^2 + ax + b$, where a and b are integers.

Find the values of a and b.

(b) $a =$ ..... $b =$ ..... **[3]**

AQA GSCE – Thursday 8 June 2020 – Paper 3 (Calculator) Higher Tier

32.

15 Solve $4 > 11 - \frac{x}{3}$

[2 marks]

Answer _____

AQA GSCE – Thursday 6 June 2019 – Paper 2 (Calculator) Higher Tier

33.

10 x is an integer.

$$-4 < x \leqslant 2$$

and

$$2 \leqslant x + 3 < 9$$

Work out all the possible values of x.

[3 marks]

Answer _____

AQA GSCE – Monday 12 November 2018 – Paper 3 (Calculator) Higher Tier

34.

10 Solve $8 > 3 - \frac{1}{2}x$

[2 marks]

Answer _____

AQA GSCE – Monday 24 May 2018 – Paper 1 (Non - Calculator) Higher Tier

35.

5 Solve $5(x + 3) < 60$

[2 marks]

Answer _____

AQA GSCE – Tuesday 12 June 2018 – Paper 3 (Calculator) Higher Tier

36.

2 Circle the list of **all** the integers that satisfy $-2 < x \leqslant 4$

[1 mark]

–2, –1, 0, 1, 2, 3 –1, 0, 1, 2, 3

–2, –1, 0, 1, 2, 3, 4 –1, 0, 1, 2, 3, 4

AQA GSCE – Thursday 2 November 2017 – Paper 1 (Non - Calculator) Higher Tier

37.

5 (a) Factorise $x^2 - 100$

[1 mark]

Answer _____

5 (b) Solve $7x + 6 > 1 + 2x$

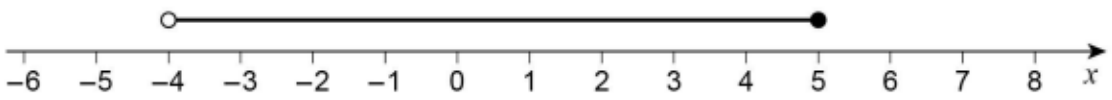
[2 marks]

Answer _____

AQA GSCE – Wednesday 8 November 2017 – Paper 3 (Calculator) Higher Tier

38.

1 Circle the inequality shown by the diagram.



[1 mark]

$-4 \leqslant x < 5$ $-4 \leqslant x \leqslant 5$ $-4 < x < 5$ $-4 < x \leqslant 5$

AQA GSCE – Wednesday 25 May 2017 – Paper 1 (Non - Calculator) Higher Tier

39.

14 Solve $-3x > 6$

[1 mark]

Answer _____

AQA GSCE – Tuesday 13 June 2017 – Paper 3 (Calculator) Higher Tier

40.

6 How are the whole number solutions to A and B different?

A Solve $3 \leqslant 3x < 18$

B Solve $3 < 3x \leqslant 18$

[2 marks]

AQA GSCE – Sample Paper 1 (Non - Calculator) Higher Tier

41.

8 Solve $5x - 2 > 3x + 11$

[2 marks]

Answer _____