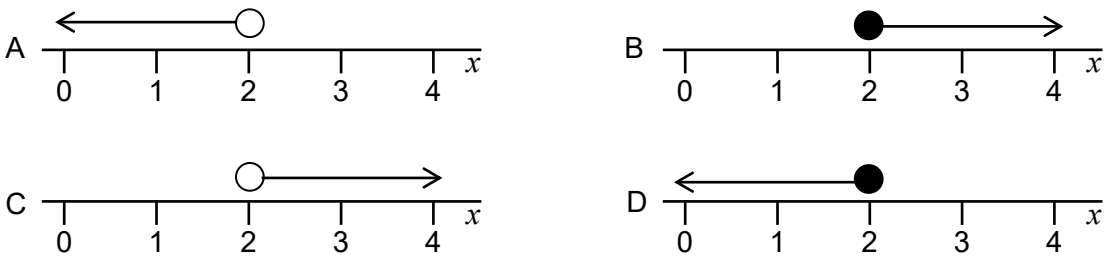
Topic Test 2 (20 minutes)

Inequalities - Foundation

1 Here is a inequality $x > 2$

Circle the letter of the diagram that shows this inequality on a number line.

[1 mark]



2 Here is an inequality $-3 < x \leq 2$

Circle the set of integers that obey this inequality.

[1 mark]

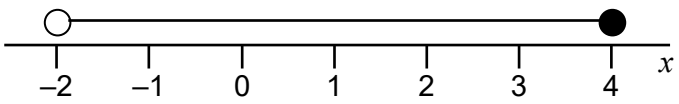
A = {–2, –1, 0, 1}

B = {–2, –1, 0, 1, 2}

C = {–3, –2, –1, 0, 1}

D = {–3, –2, –1, 0, 1, 2}

3 Here is an inequality shown on a number line.



Circle the algebraic inequality that defines the inequality shown on the number line.

[1 mark]

$-2 < x < 4$ $-2 \leq x < 4$ $-2 < x \leq 4$ $-2 \leq x \leq 4$

4 Work out the smallest integer value that satisfies $4x + 3 > 20$

[3 marks]

Answer _____

5 Solve $2x - 6 < 3 - 4x$

[2 marks]

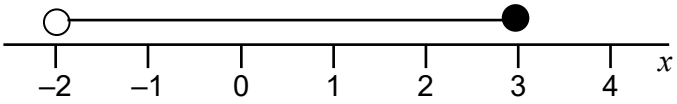
Answer _____

6 (a) Solve the inequality $-7 \leq 3x - 4 < 9$

[3 marks]

Answer _____

6 (b) Here is a inequality drawn on a number line.



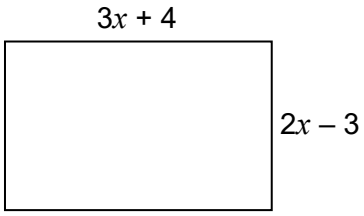
Write down all the integers that obey this inequality **and** the answer to part (a).

[1 mark]

Answer _____

7 All measurements are in centimetres.

This rectangle has sides of $3x + 4$ and $2x - 3$



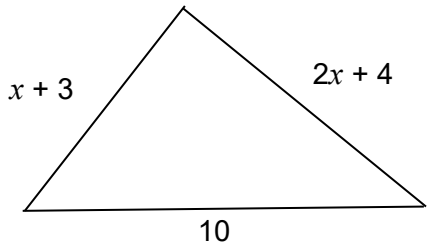
You are given that perimeter ≤ 55 cm^2

Work out the maximum **area** of the rectangle.

[4 marks]

Answer _____ cm^2

8 All measurements are in centimetres.
Here is a triangle.



Work out the values of a and b such that $a < x < b$

[4 marks]

$a =$ _____

$b =$ _____