**Inequalities**

3 main types of question

*Example 1*

-3‹ x ≤ 1

x is an integer.

Write down all possible values of x.

-2, -1, 0, 1 *(-3 is not included as x > -3!)*

*Example 2*

Write down the inequality shown on the number line.

*x*

-5

-4

-3

-2

-1

0

1

2

3

4

5

This represents -4 ‹ x ≤ 4 means ‹

means ≤

*Example 3*

Solve the inequality 4a – 7 ≥ 13 *with this type of problem, solve like it’s an equation*

4a – 7 + 7 ≥ 13 + 7

4a ≥ 20

4a ≥ 20

4 4

a ≥ 5

**Exercise**

1. Write down the integer values satisfying:

(a) -2 ‹ x ≤ 5 (b) -2 ≤ x ‹ 3

1. -5 ≤ x ‹ 0 (d) 1 ‹ x ≤ 4

(e) -1 ‹ x ≤ 3 (f) -3 ≤ x ‹ 2

(g) -6 ≤ x ‹ -1 (h) -2 ‹ x ≤ 4

2. Write down the inequalities shown in the following diagrams

a.

7

6

5

4

3

2

1

0

-1

-2

-3

*x*

b.

7

6

5

4

3

2

1

0

-1

-2

-3

*x*

c.

7

6

5

4

3

2

1

0

-1

-2

-3

*x*

d.

7

6

5

4

3

2

1

0

-1

-2

-3

*x*

e.

7

6

5

4

3

2

1

0

-1

-2

-3

*x*

f.

7

6

5

4

3

2

1

0

-1

-2

-3

*x*

3. Solve the following inequalities

(a) 2a + 3 ‹ 13 (b) 3b + 1 ≤ 10

1. 3c – 5 ≥ 16 (d) 16 › 2d + 4

(e) 5e + 10 ‹ -5 (f) 2f - 1 ≤ 11

(g) 6g - 7 ≤ 3g + 5 (h) 7h – 10 ≥ 11