

## Unit 3 - Equations

|                      |                                                                                                           |
|----------------------|-----------------------------------------------------------------------------------------------------------|
| Solving Inequalities | Classwork: 1 & 2 orally, 3, 5, 7, 9, 12, 17, 18, 20, 24, 26, 30, 37, 40, 45, 50, 53, 63, 66, 78           |
| Questions on Reverse | Homework: 4, 6, 8, 10, 14, 16, 19, 21, 25, 27, 32, 39, 43, 47, 51, 54, 60, 62, 65, 69, 75, 76, 77, 81, 82 |

- Notes:**
- ① Inequalities are solved in exactly the same way as equations.
  - ② In equations there is one solution eg " $x=3$ ". Inequalities have more than one soln - in fact there are infinitely many solutions eg  $x < 2$
  - ③ If we multiply or divide across an inequality by a negative, then we must reverse the direction of the inequality. eg  $-\frac{2}{2}x > \frac{6}{2}$

④ The symbols.  $<$  less than  $>$  greater than  $\leq$  less than or equal  $\geq$  greater than or equal  $x < -3$

Classwork (From the back of your Unit Outline)

Solve and graph the solution set graphs (for ineq) are on a number line

$$3. \quad x-2 > 0, \quad x \in \mathbb{I} \quad \text{integers}$$

$$x > 2$$

solution belongs to



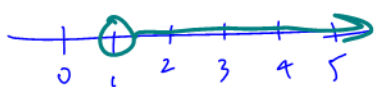
$$5. \quad x-3 < 1, \quad x \in \mathbb{R}$$

$$x < 4$$



$$7. \quad y-4 > -3, \quad y \in \mathbb{R}$$

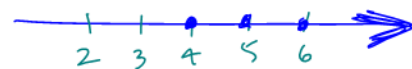
$$y > 1$$



$$9. \quad 1 < -2+z, \quad z \in \mathbb{I}$$

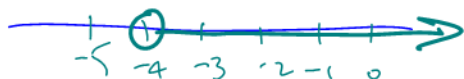
$$-2+z > 1$$

$$z > 3$$



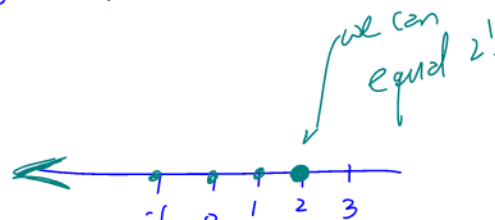
$$12. \quad 2y > -8, \quad y \in \mathbb{R}$$

$$y > -4$$



$$17. \quad \frac{6p}{2} \leq \frac{12}{2}, \quad p \in \mathbb{I}$$

$$p \leq 2$$



$$18. -15 \geq 5t, t \in \mathbb{I}$$

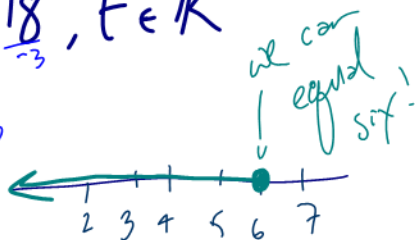
$$20. \frac{-3m}{-3} < \frac{9}{-3}, m \in \mathbb{R}$$

we divide by a negative.  $m > -3$

(no graph)

$$24. \frac{-3t}{-3} \geq \frac{-18}{-3}, t \in \mathbb{R}$$

$$t \leq 6$$



$$26. 21 \geq -7x, x \in \mathbb{I}$$

$$37. 4x + 2 < 3x + 5, x \in \mathbb{R}$$

$$40. 5y + 7 \leq 4y - 2, y \in \mathbb{I}$$

Solve

$$45. 4(x-3) > 3x+1$$

$$66. 6(y-2)+7 > 8y-25, y \in \mathbb{R}$$

$$76. 5(y+1) - 2(y+3) \leq 5(y-1), y \in \mathbb{R}$$

$$5y + 5 - 2y - 6 \leq 5y - 5$$

$$3y - 1 \leq 5y - 5$$

$$3y - 5y \leq -5 + 1$$

$$\frac{-2y}{-2} \leq \frac{-4}{-2}$$

$$y \geq 2$$

we divided by a negative