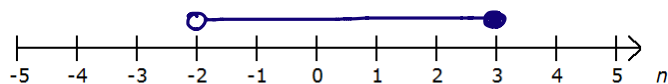


# Inequalities

How to ...  $<$  or  $>$  will be an empty circle

$-2 < n \leq 3$       $\leq$  or  $\geq$  will be a solid circle

(a) Represent this inequality on the number line



$$-2 < n \leq 3$$

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

$$(+3) \quad 8x - 3 \geq 6x + 4$$

$$(-6x) \quad 8x - 6x - 3 \geq 6x - 6x + 4$$

$$(\div 2) \quad \frac{2x}{2} \geq \frac{7}{2}$$

$$x \geq 3.5$$

mistakes get made by trying to do too many steps on one line... take your time 😊 (4)

Your answer must include an inequality don't change it to an "=" symbol.

Now have a go yourself ...

**SORTED IT** - write down the possible values of  $x$

a)  $-1 \leq x \leq 5$      b)  $1 \leq x \leq 5$      c)  $-2 \leq x \leq 3$

d)  $3 \leq x < 7$      e)  $-1 < x \leq 3$      f)  $-2 \leq x < 1$

g)  $-3 < x < 3$      h)  $-1 \leq x < 4$      i)  $-3 \leq x < 3$

**NAILED IT** - solve the following inequalities

a)  $5x \geq 15$      b)  $6x \leq 30$      c)  $4x \geq 16$

d)  $x + 4 > 11$      e)  $x - 4 < 11$      f)  $x + 8 > 13$

g)  $x - 5 > 2$      h)  $5x + 2 \geq 12$      i)  $2x + 4 > 16$

j)  $5x - 4 < 36$      k)  $3x + 4 \leq 7$      l)  $7x + 7 \geq 77$

**MASTERED IT** - solve the following inequalities

a)  $3(x + 2) > 5 - x$      b)  $3x < x + 9$

c)  $5x - 3 > 2x + 9$      d)  $2(x + 3) \leq 11$

e)  $5x - 7 > 3(x + 2)$      f)  $x + 3 \geq 5(x - 2)$

***Mission (not) impossible ...***

Your challenge should you choose to accept it, is to write your own equations which include inequalities - you must include a full solution.

Swap your questions with another student and see if you both get the correct answers.

## Exam Questions

- List all the possible integer values of  $n$  such that  
$$-2 \leq n < 3$$
- $$-2 < x \leq 1$$
  
 $x$  is an integer. Write down all the possible values of  $x$ .
- Solve the inequality  $6x < 7 + 4x$
- Solve the inequality  $3x + 2 > -7$
- Solve the inequality  $5x - 7 < 2x - 1$
- Solve the inequality  $4p - 8 < 7 - p$

## Ready to be marked ?

### Checklist

Answer checked

Inequality symbol included in answer

### Keywords



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### Things to remember ...



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### What went well ...



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### Teacher comment ..