LO: To solve a range of algebraic equations

Key things to remember about algebra:

5y mean 5 times y (we don't use the multiplication symbol in algebra because it looks the same as an x)

The equals sign is super important- this shows both sides of the equation should be the same

Where there is a letter in an equation this is used to represent a missing value

Where there is the same letter within an equation, it should have the same value Eg 2x+x= x must be the same both times

BODMAS still applies

TASK 1: Write the equation in your book and solve

1) $7n=77$
2) $4n-2=22$
3) $20+5n=65$
4) $36\div n=6$
5) $n+12=21$
6) $\frac{2}{12}n-18=126$
7) $4n-8=12$
8) $2n-110=290$
9) $2(n-34)=12$
10) $11n-\frac{2}{6}=30$

2 key ways to solve algebraic equations:

Option 1: Work backwards through the calculation and use the inverse

Option 2: Make an estimate of what the missing value can be and then use trial and error

TASK 1: ANSWERS

1) n=11
2) n=5
3) n=9
4) n=6
5) n=3
6) n=12
7) n=5
8) n=200
9) n=40
10) n=6

TASK 2: Sometimes you will be given the missing value to input into the calculation and need to find the answer. Have a go at these:

If y=8

1)4y=?

2)$y-^{2}2y$=?

3) 9y-45=?

4) (y+14)÷2=?

5) 4y-12=?

6) y+12÷4

7) $4y+12^{2}$

TASK 2: ANSWERS

1)32
2)48
3) 27
4) 11
5) 20
6) 5
7) 20

TASK 3: In some equations you may have more than one missing value. E.g. 4n+2y=22
If n=6 what is y worth?

1) 2n-y=0
2) 5n+2y=52
3) y^2 +2n=76
4) 5y-n=29

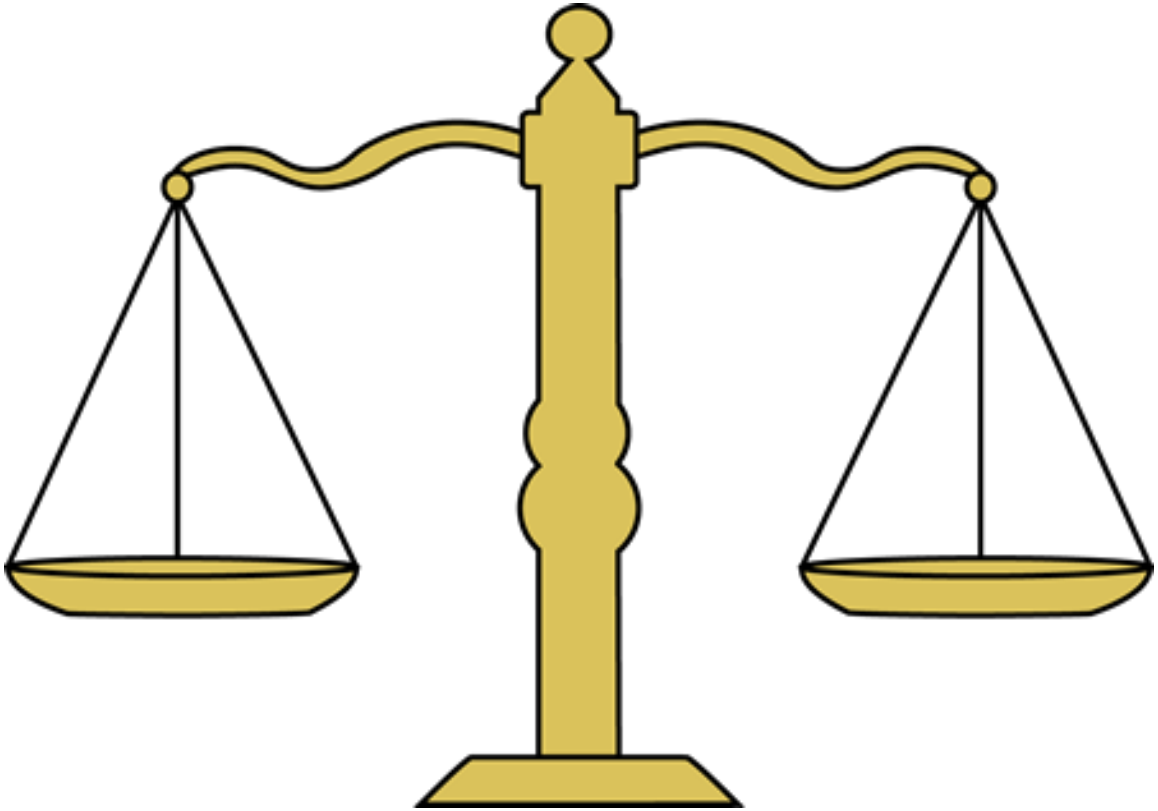
If n=8 what is y worth?

5) n-2+y=30
6) 9n+y=100
7) 2n-4y=4
8) (n+27)-5y=0

TASK 3: ANSWERS

1) y=12
2) y=11
3) y=8
4) y=7
5) y=24
6) y=28
7) y=3
8) y=7

Can you remember this method:



Watch this video for a recap on how to solve algebraic equations with missing values on both sides:
https://www.youtube.com/watch?v=DS4XCSSQZOw

TASK 4: Use the scale method to solve these equations. Write the equation in your book and show your working out

a) $4x+3= 3x+9$
b) $5x+4= 2x+19$
c) $6y+1= y+11$
d) $3n+4= n+9$
e) $4b+5=2b+13$
f) $6y+1= 5y+14$
g) $3x+4= x+18$
h) $6x-9=4x+5$
i) $8y+2=14y-16$
j) $n+22=4n-14$

TASK 4: ANSWERS

a) x=6
b) x=3
c) y=2
d) n=2.5
e) b=4
f) y=13
g) x=7
h) x=7
i) y=3
j) n=12