

# MOA HUB - MATHS WORD PROBLEMS I

## GAME PROBLEMS!

*Have a go at understanding and solving these maths problems. We will post a video which will walk you through SOME of the problems and support you with strategies!*

### Problem 1:

In a game of Trivial Pursuit, you need to get 6 segments in your 'pie' to help you win.

If you have one third of the segments already, how many segments do you still need to fill your pie?

If you then earn another segment, what fraction of your pie will be completed?

At one point in the game, you have two thirds of your pie filled with segments. Would this happen before or after you had 5 segments? How do you know?



### Problem 2:

In Minecraft, you have been building a rectangular house. The diagram shows the shape. Each corner has a letter name: A, B, C or D.

The inside of the house is hollow; there is one row of bricks in each line to make the walls. There is no floor, but the roof is a flat layer of bricks which covers the whole area of the building.  
(Multiply the height by the length to find the area)

Your job is to read the clues and calculate the number of bricks in the building.

Lines AB and CD are double the length of AC and BD. AB is 12 bricks long.

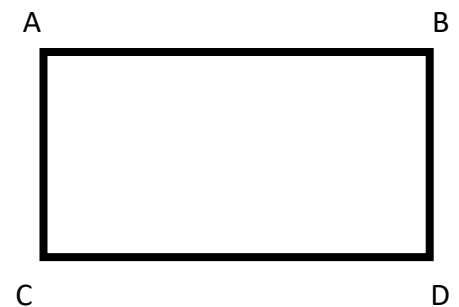
Each wall is 8 bricks high.

AB and CD each have windows which are square. There are 4 bricks on each side of the squares.

BD has a window which is half the size of the windows in AB and CD. There are no bricks in the window spaces.

AC has the door which is a rectangle: 6 bricks by 4 bricks – no bricks are in the door space.

So, how many bricks are in the house?



### Problem 3:

In Monopoly, you have just passed GO and have \$1000 in your bank. You have 2 HOUSES on each of the 3 **red** properties and 1 HOTEL on each of the 2 **brown** properties. You have just been boasting to the other players.

This is good...but who knows with Monopoly!

Straight away you are in trouble. You've landed on INCOME TAX. You have to pay \$200.

You roll 3 and land on CHANCE. What will it be?  
MAKE GENERAL REPAIRS ON ALL OF YOUR BUILDINGS  
FOR EACH HOUSE PAY \$25  
FOR EACH HOTEL PAY \$100  
Bummer.

Next roll is 7....it takes you to Northumberland Avenue where there are 2 HOUSES. Pay RENT of \$180.

This is typical Monopoly.

Next roll is double 3 – it takes you to Free Parking...but you have to roll again. It's a 5. Past your lovely **red** properties, on to Fenchurch St Station. All four stations are owned by another player. Minus another \$200. This is getting desperate...you're starting to wish you land on GO TO JAIL.

Then, another player lands on one of your **brown** properties:

They owe you RENT! Yes! Finally!! Some INCOME!

You roll again...it's 5. Of course.  
Off to Jail you go!

Sitting in jail, you wonder how much money you have now.

So, how much do you have?



WHITECHAPEL ROAD	
TITLE DEED	
	\$
RENT – SITE ONLY	4
"    with 1 house	20
"    with 2 houses	60
"    with 3 houses	180
"    with 4 houses	320
RENT WITH HOTEL	450
If a player owns <b>all</b> the sites of any colour group, the rent is <b>doubled</b> on <b>unimproved</b> sites in that group.	
Cost of houses	£50 each
Cost of hotels	£50 plus 4 houses
Mortgage value of site	£30