



WORKING IT OUT

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SOMETIMES STUCK?

- Scratching your head or worrying won't help
- Problem solving
- Consider it like a puzzle
- Not getting too confused by it all
- Don't panic or think you can't do it
- Rational thinking is required
- Split something big into smaller chunks
- One step at a time
- Keep in mind, it can be done!

STEP BY STEP



Splitting into
manageable chunks



Start with extracting
what you can



Don't worry about
the final moment



Concentrate upon
each small task

THE QUESTION

Bill and Bob wish to purchase a new machine for their growing business. They have an older machine stationed in Ireland worth Euro 133,500 in working assets and their parent company has provided some cash funding from the USA for the amount of \$210,800 which is sent to them in Scotland at current exchange rates.

They decide to apply for a bank loan. The bank uses the following formula to calculate the maximum loan amount available.

$$\text{Maximum Loan} = 3\frac{3}{4}c + 1\frac{1}{2}a$$

Where $c = \text{cash}$

$a = \text{assets (working assets, fixed assets)}$

Bill has other assets in furniture worth £132,319 and Bob has cash in account of £15,882

The selling fees for assets amounts to £44,295

Current exchange rates as per your bank is £1:Euro 1.14 and £1:\$1.42

How much money could Bill and Bob have available to buy a new machine to the nearest whole pound?

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STEP 1: SPLIT IT DOWN

- Bill and Bob – new machine, want a loan
- Machine in Ireland assets worth Euro 133,500
- Cash funding USA amount to USD 210,800
- Bank has a formula
- Bill has other assets worth £132,319
- Bob has cash account of £15,882
- Currency exchange rates
- Let's get everything into the one currency
- Question wants whole pounds – Pounds Sterling

STEP 2: MACHINE CURRENCY INTO £

- Machine worth Euro 133,500
- Exchange rate of Euro 1.14 to the £1
- Remember, largest number currency must remain the largest
- Euro is the bigger number, £ is smaller number
- Multiplying makes a bigger number, we need smaller
- Therefore, divide ... Provides a smaller number
- Euro $133,500 \div 1.14 = 117,105.2631578947$
- Machine worth **Pounds Sterling £117,105.26**

STEP 3: USDOLLARS INTO £

- USA cash USD 210,800
- Exchange rate is £1 is equivalent to USD 1.42
- Again, the USD is bigger number, £ smaller
- Multiplying makes a bigger number, division smaller
- $\text{USD } 210,800 \div 1.42 = 148,450.7042253521$
- Rounded off to **Cash Pounds Sterling £148,450.70**

STEP 4: UNDERSTAND THE FORMULA

- Bank uses a formula to calculate loan amount available

Formula: ***Maximum Loan*** = $3\frac{3}{4} c + 1\frac{1}{2} a$

- We need to know total of Cash
- We need to know total of Assets

STEP 5: CASH AND ASSETS

- We need to know total of Cash
 - USA parent company (converted into £): £148,450.70
 - Bob has cash in bank account: £15,882.00
 - TOTAL **CASH** (add them together) = **£164,332.70**
- We need to know total of Assets
 - Older machine Ireland (converted into £): Pounds Sterling £117,105.26
 - Bill furniture assets: £132,319.00
 - TOTAL **ASSETS** (add them together) = **£249,424.26**

STEP 6: FORMULA

- Maximum Loan = $3\frac{3}{4} c + 1\frac{1}{2} a$
- c is the cash, a is the assets
- $3\frac{3}{4}$ into decimal is $\frac{3}{4} = 0.75$ plus the 3 = 3.75
- $1\frac{1}{2}$ into decimal is $\frac{1}{2} = 0.5$ plus the 1 = 1.5

- Now, we can work the formula through, using BODMAS is required
- $3.75 \times \text{cash amount of } \pounds 164,332.70 = \pounds 616,247.63$ (rounded off)
- $1.5 \times \text{assets amount of } \pounds 249,424.26 = \pounds 374,136.39$
- Last part of formula is one plus the other =

$\pounds 990,384.02$

STEP 7: ANSWER

- As a result of the previous step 6 we know the result of the formula calculation
- £990,384.02
- The question again
- How much money could Bill and Bob have available to buy a new machine to the nearest whole pound?
- Rounded off to the nearest whole pound
- Declared answer: £990,384
- Job done!

SPLIT DOWN – STEP BY STEP

- Patience, have patience, view it as a puzzle with a solution handy
- Don't be blinded by all the information
- Don't give up before you have started
- Use a rational method
- Understand the question from the information
- Use a divider between steps, separate the steps
- Name the steps, give them purpose
- Work it through
- Mathematics is all about processes and steps

SUMMARY

- Split into smaller chunks
- Take the information from the text
- Note all the information first
- Understand each step – step by step
- Name/label each step
- Use knowledge from each topic required
- Gradually build to the answer
- Remember processes
- It is problem solving