Running a Business

Scenario

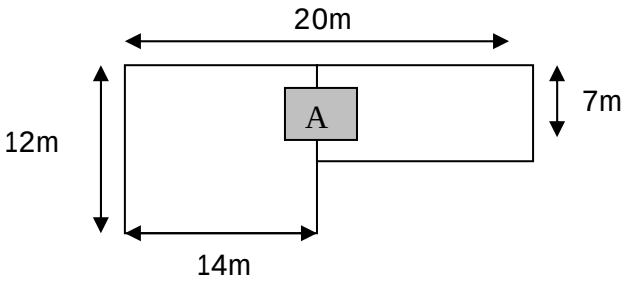
You are looking to run your own clothes store and have employed a company to do some research. Their findings are below but you need to analyse the data to decide upon some aspects of the business.

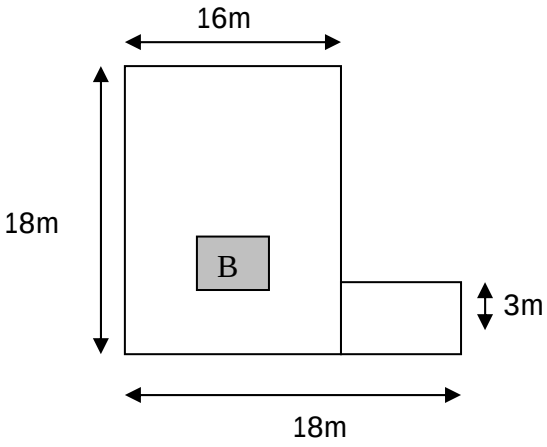
Stage 1 – The Property

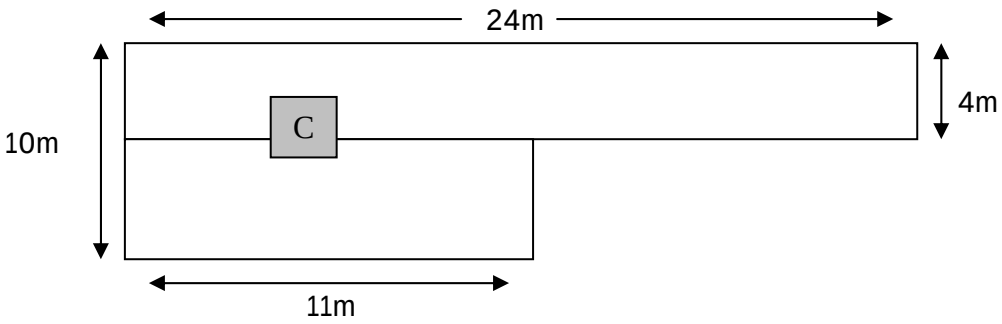
The following properties have been chosen (plans below). You are looking for the property with the most space, so which one should you choose?

TASK 1

Calculate the area for each property to decide which one to use.







MSS1/2.8 area of composite shapes. MSS1/L2.9 use given formulae to find volumes of regular shapes. HD1/L2.3 (2.4) find mean, mode, median (range). N2/L2.7 order & compare %s, understand % increase and decrease. N2/L2.8 find % parts of quantities. N1/L2.3 ratio and direct proportion.

Stage 2 – The Stock

Research has provided you with a table of prices of different garments from your main rivals and their prices:

NAME	BURTON	DOT P	BINNS	PRIMARK	NEXT	RI
Jeans	34.95	20.95	65.00	8.00	45.00	40.00
Shirts	36.97	19.97	60.00	10.00	50.00	42.00
Shoes	35.95	24.95	75.00	15.00	55.00	50.00
Trainers	40.00	24.96	80.00	20.00	60.00	55.00

You need to decide what prices you should charge for each garment.

TASK 2

Work out the mean average price of the each garment and use this as the price to charge.

Also calculate the median and range for each garment.

Stage 3 – Tax

The government have decided to put a tax on the price you are going to charge for each garment.

The taxes are worked out as a % of the average price (to nearest £).

Item	Tax - % of average price	Tax charged	New Price
Jeans	20% of average price		
Shirts	35% of average price		
Shoes	15% of average price		
Trainers	30% of average price		

TASK 3

Work out the tax for each garment and then the new price.

NEW PRICE = TAX + AVERAGE PRICE (Rounded to nearest £)

MSS1/2.8 area of composite shapes. MSS1/L2.9 use given formulae to find volumes of regular shapes. HD1/L2.3 (2.4) find mean, mode, median (range). N2/L2.7 order & compare %s, understand % increase and decrease. N2/L2.8 find % parts of quantities. N1/L2.3 ratio and direct proportion.

Stage 4 – Employees

You have decided that you would like a ratio of 3 women to every 1 man in your stores.
You have decided to open 12 stores across the UK. Each store will employ 16 staff.

TASK 4
Work out how many men and women you will have:

A- In each store
B- In the entire company (not including you).

Stage 5 – Location

The best business in the North is located around Newcastle

The scale is 5cm = 20miles

TASK 5
What are the following distances, approximately?

A- Newcastle upon Tyne to Durham
B- Newcastle upon Tyne to Sunderland
C- Newcastle to Hartlepool

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Stage 6 – Packaging

The company have decided to pack most of the stock into boxes.

The boxes will come in two sizes:

A - 1.5m x 2m x 1m

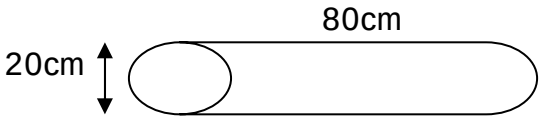
B - 3m x 1m x 1.5m

They will be 5 size (A) boxes and 4 size (B) boxes.
These will be packed into a lorry that measures:

Lorry – 6m x 4m x 2m

TASK 6
Calculate the volume of the different boxes and see if they will fit into the lorry.

They will also use long tubes for the advertising and have decided on the following tubes:



TASK 7
Work out the volume of the tube, using the formula below:

πr^2 x length

(where π = 3.14)

'Running a Business' Level 2 Assignment - Answers

TASK 1

A 210m^2 (168 + 42)
B 294m^2 (288 + 6)
C 162m^2 (96 + 66)
Therefore property B is the largest

TASK 2

Jeans Mean = £213.90 / 6 = £35.65 (£36)
Median = (34.95 + 40.00) / 2 = 37.475 (£37.48)
Range = £65.00 - £8.00 = £57.00

Shirts Mean = £218.94 / 6 = £36.49 (£36)
Median = (36.97 + 42.00) / 2 = 39.485 (£39.49)
Range = £60.00 - £10.00 = £50.00

Shoes Mean = £255.90 / 6 = £42.65 (£43)
Median = (35.95 + 50.00) / 2 = 42.975 (£42.98)
Range = £75.00 - £ £15.00 = £60.00

Trainers Mean = £279.96 / 6 = £46.66 (£47)
Median = £40.00 + £55.00 /2 = £47.50
Range = £80.00 - £20.00 = £60.00

TASK 3

Item	Tax - % of average price	Tax charged	New Price
Jeans	20% of average price (£36)	£7.20	£43.20
Shirts	35% of average price (£36)	£12.60	£48.60
Shoes	15% of average price (£43)	£6.45	£49.45
Trainers	30% of average price (£47)	£14.10	£61.10

TASK 4

A In each store = 12 women and 4 men
B Total in company = 144 women and 48 men

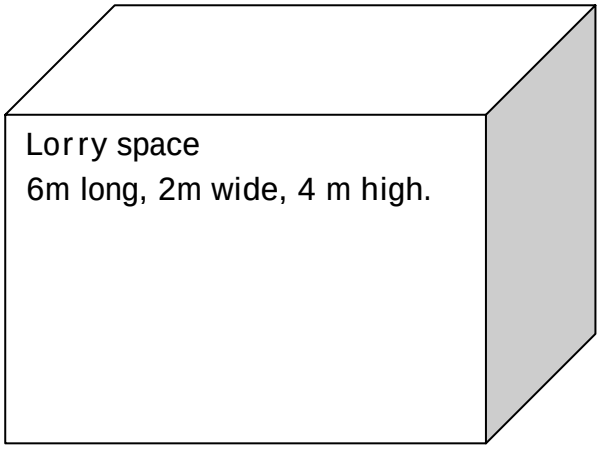
TASK 5

A approx 5cm on map (= 20 miles)
B approx 3cm on map (= 12 miles)
C approx 8 cm on map (= 32 miles)

TASK 6

A volume of 1 box = $3m^3$. Total volume of boxes size A = 3 x 5 = $15m^3$
B volume of 1 box = $4.5m^3$. Total volume of boxes size B = 4.5 x 4 = $18m^3$
Total volume of boxes = $33m^3$

Volume of lorry = 6 x 4 x 2 = $48m^3$
Thus there is enough physical space in the lorry – but you must still work out if the boxes can be fitted into the space.
This is possible.
For example (assuming boxes can be placed any way up in the lorry):
4 x Box B as the 'bottom layer' (this would completely cover the floor area of the lorry and fill it to a height of 1.5 m.
4 x Box A as the next layer (this would now fill the lorry another 1m making total filled height of 2.5m)
1 x Box A on top layer.
Other arrangements may be possible!



TASK 7

Volume tube = πr^2 x length
r = 10cm
π = 3.14
Length = 80cm

Volume = 3.14 x 100 x 80
= 314 x 80
25 120cm^3