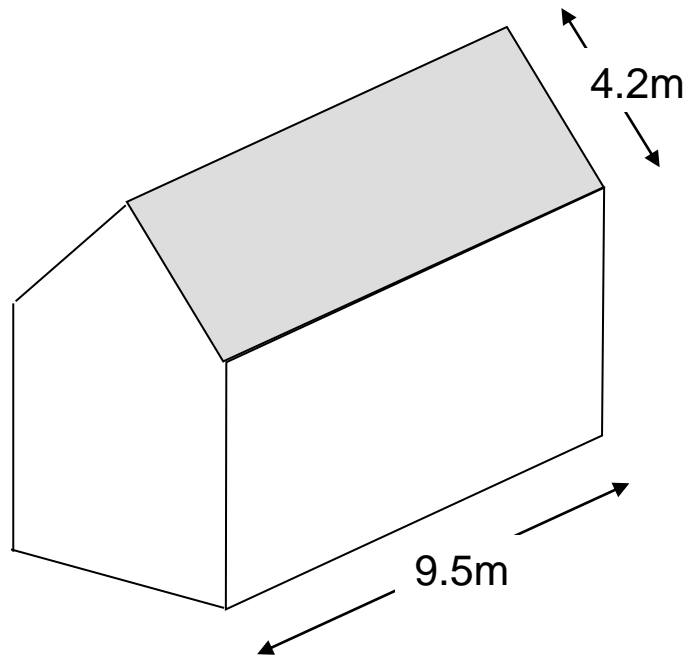


# Introduction to Percentages

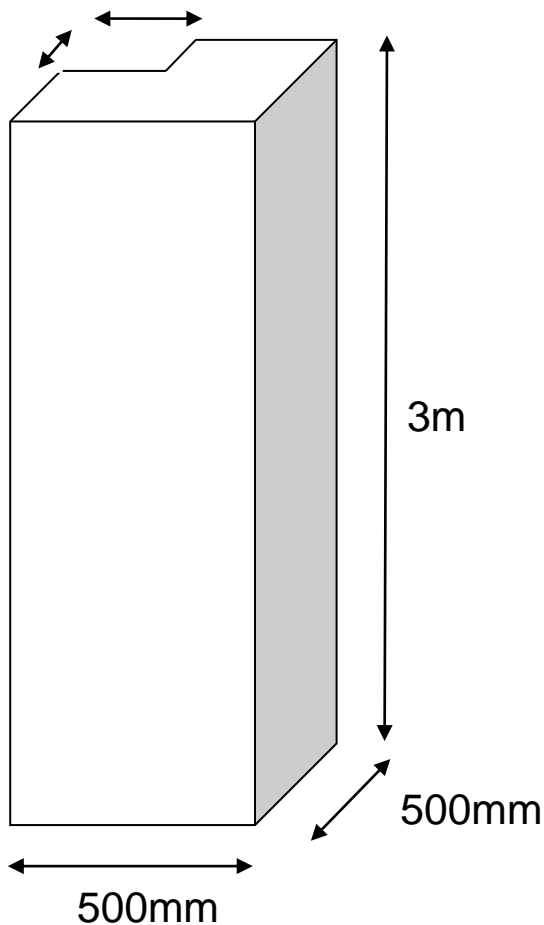
Note some answers can be found in the Presentation Percentage Differences Presentation

## Q. 1

Calculate the area of the pitched roof shown (both sides) and determine the number of slates required if  $1\text{m}^2$  takes 13.3 slates. (Add 15% for eaves overhang, cutting and waste)



Rebate  
200mm x 200mm



## Q. 2

(a) Calculate the volume of concrete required to fill this rebated column

(b) If concrete is charged at € 95 per  $\text{m}^3$  calculate the cost. (Apply VAT at 13.5%)

# Percentages

- Q 3.** The list price for a power saw is € 276 plus VAT @ 23%. Calculate the total price of the saw.
- Q 4.** When soil is excavated its bulk volume increases. This is known as bulking. Calculate the total (increased) volume of soil allowing for bulking @ 25% when the calculated volume of the excavation is  $52.8\text{m}^3$ .
- Q 5.** 18 full truckloads of soil are excavated from a foundation trench. Calculate the volume of the trench when each truckload is an average of  $24\text{m}^3$  (after bulking) and bulking of soil is estimated at 25%.
- Q 6.** A builder buys a quantity of toilet fittings from a supplier at € 1968 (including VAT @ 23% which will be re-claimed). He will then charge the client an extra 15% for profit and overheads and 10% VAT. How much will the client pay?

## Percentages (Answers)

- Q. 1  $9.5 \times 4.2 \times 2 = 79.8\text{m}^2$   
 $79.8 \times 13.3 = 1061.34$  tiles  
 $1061.34 \times 1.15 = 1220.541$   
**Ans = 1221 tiles**
- Q. 2 Volume =  $3 \times 0.5 \times 0.5 = 0.75$   
Less  $3 \times 0.2 \times 0.2 = \underline{0.12}$   
 $0.63 \text{ m}^3$   
€ 95  
€ 59.85  
 $€ 59.85 \times 1.135 = € 67.92975$   
**Ans = € 67.93**
- Q. 3  $€ 276 \times 1.23 = € 339.48$
- Q. 4  $52.8\text{m}^3 \times 1.125 = 66\text{m}^3$
- Q. 5  $18 \times 24 = (432\text{m}^3 / 125) \times 100 = 345.6\text{m}^3$
- Q. 6  $(€ 1968 / 123) \times 100 = € 1600 \times 1.15 = € 1840$   
 $€ 1840 \times 1.10 = € 2,024$

## Percentages 2

- Q 1.** Your firm wants to purchase a new commercial van. It retails at a cost of € 27,500 including VAT@ 23%.  
How much will it actually cost your company?
- Q 2.** When soil is excavated its bulk volume increases. This is known as bulking. Calculate the total (increased) volume of soil allowing for bulking @ 35% when the calculated volume of the excavation is 180m<sup>3</sup>.
- Q 3.** 12 full truckloads of soil are excavated from a foundation trench. Calculate the volume of the trench when each truckload is an average of 27.333m<sup>3</sup> (after bulking) and bulking of soil is estimated at 35%.

## Percentages 2 (Answers)

Q. 1     $\text{€ } 27,500 / 1.23 = \text{€ } 22,357.72$

Q. 2     $180\text{m}^3 \times 1.35 = 243\text{m}^3$

Q. 3     $12 \times 27.333 = 328\text{m}^3 / 1.35 = 242.96\text{m}^3$