

Quantitative Methods

Percentages Differences

Module No. Cons 1012

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Percentage Difference

- To find the percentage difference:
- **Divide by what you have and multiply by what you want**
- Eg : if 45% of the cost of a chair is €90. What is the total cost?
- $\frac{90}{45} \times \frac{100}{1} = €200$ or $90 \div 45 \times 100 = €200$
- **Example 1** If 70% is €3150 what is 100%
- $3150 \div 70 = 45$
- $45 \times 100 = €4500$
- **Example 2** If 64% = €96 what is 38%
- $96 \div 64 = 1.5$
- $1.5 \times 38 = €57$

Percentage Difference

- To find the percentage difference:
- **Divide by what you have and multiply by what you want**
- **Example 3** If 326.25 includes 45% what is 100%
- $326.25 \div 145 = 2.25$
- $2.25 \times 100 = \text{€}225$

- **Example 4** If I bought a table for x amount and sold it for €552 making a profit of 20%. What price did I pay for the table.
- **Table :** $552 = 120\%$
- $552 \div 120 = 4.6$ **divide by 120 to find 1%**
- $4.6 \times 100 = \text{€}460$ **multiply by 100**

Percentage Difference Questions

- **Q5.** If a Dealer bought a Van for €6500 and sold it for €7800 what percentage profit did he make.
- $7800 - 6500 = 1300$ **difference**
- $1300 \div 6500 (0.2) \times 100 = 20\%$ **profit**
- To check $6500 + 20\% (1300) = €7800$

- **Q6.** If a mistake in pricing resulted in windows costing €1250 being sold at €1125 calculate the percentage loss
- $1250 - 1125 = 125$ **difference**
- $125 \div 1250 (0.1) \times 100 = 10\%$ **loss**
- To check $1250 - 10\% (125) = €1125$

Percentage Difference Questions

- **Q7.** If a door and frame costs €420 to make and is sold for €525 calculate the percentage profit
- $525 - 420 = 105$ **difference**
- $105 \div 420 (0.25) \times 100 = 25\%$ **profit**
- To check $420 + 25\% (105) = €525$

- **Q8.** A Contractor priced a job at €97,500. The cost of the job on completion was €105,300 . Calculate the percentage loss
- $105,300 - 97,500 = 7800$ **difference**
- $7,800 \div 97,500 (0.08) \times 100 = 8\%$
- To check $97,500 + 8\% (7800) = €7800$

Percentage Questions Worksheet 3

- **Q4.** 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 52.8m^3 .
- Q. 4 $52.8\text{m}^3 \times 1.25 = 66\text{m}^3$
- **Same as**
- $52.8\text{m}^3 + 25\% = 66\text{m}^3$

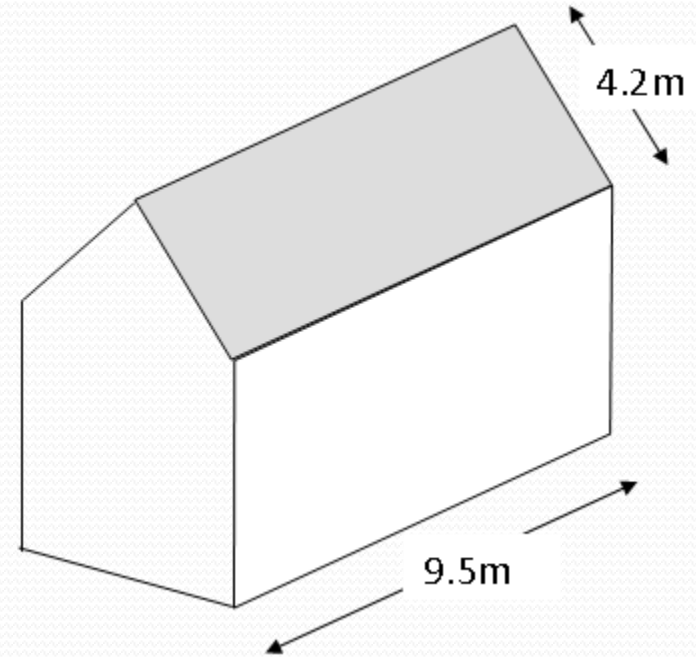
Percentage Questions Worksheet 3

- **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 24m^3 (after bulking) and bulking of soil is estimated at 25%.
- Q. 5 $18 \times 24 = (432\text{m}^3 / 125) \times 100 = 345.6\text{m}^3$
- **Same as**
- $24 = 125\%$
- $24 \div 125 \times 100 = 0.192 \times 18 = 345.6\text{m}^3$
- $24 \div 125 \times 100 \times 18 = 345.6\text{m}^3$

Percentage Questions Worksheet 3

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

- Q. 1 $9.5 \times 4.2 \times 2 = 79.8\text{m}^2$
- $79.8 \times 13.3 = 1061.34$ slates
- $1061.34 \times 1.15 = 1220.541$
- **Ans = 1221 slates**
- **Or**
- $9.5 \times 4.2 \times 2 = 79.8\text{m}^2$
- $79.8 + 15\% = 91.77\text{m}^2$
- $91.77 \times 13.3 = 1220.541$
- **Ans = 1221 slates**



Percentage Questions Worksheet 3

- **Q. 2** (a) Calculate the volume of concrete required to fill this rebated column
- (b) If concrete is charged at € 95 per m³ Calculate the cost. (Apply VAT at 13.5%)
- Q. 2 Volume = $3 \times 0.5 \times 0.5 = 0.75\text{m}^3$
- Less $3 \times 0.2 \times 0.2 = \underline{0.12}$
- 0.63 m^3
- $\times \underline{\text{€}95.00}$
- $\text{€}59.85$
- $\text{€}59.85 \times 1.135 = \text{€}67.92975$
- **Ans = €67.93**

