

Quantitative Methods

Percentages

Module No. Cons 1012

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Percentages

- **Percent means per 1 hundred**
- **The symbol used is %**
- To find the percentage we put the number over 100
- $50\% = \frac{50}{100} = \frac{5}{10} = \frac{1}{2}$ or 0.5
- $200 + 50\% = 200 \div 100 = 2$
- $2 \times 50 = 100$ $200 + 100 = 300$
- on your calculator type in
- $200 + 50\% = 300$

Percentages Example Questions

- **No. 1** The material cost €250 plus 21% VAT
- How much did the customer have to pay in total?
- $250 + 21\% (52.50) = 302.50$
- Answer = €302.50

- **No. 2** The floor area to be tiled is 42m^2 allow 25% for waste. Calculate how many squared meters of tiles are needed.
- $42 + 25\% (10.5) = 52.5\text{m}^2$

Percentages Example Questions

- **No.3** Flooring costs €39 per m². The Customer needs 22m². Calculate the cost of the flooring if during the sales there is a 30% reduction to the price.
- $22 \times 39 = 858$ normal price is €858
- $858 - 30\% (257.40) = 600.60$ €600.60

- **No.4** A job costs €455 to complete allow 35% for profit and 21% for vat how much will the customer have to pay?
- $455 + 35\% (159.25) = 614.25$
- $614.25 + 21\% (128.99) = 743.24$
- Total price = € 743.24
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Percentages Questions

- **Q1.** A floor area 25m^2 is to be covered in tiles costing €42 per m^2 allow 20% for waste.
- How much will the customer save if they wait to buy the tiles during the sales when there will be 25% off?
- **Answer :**
- **$25 \times 42 = 1050\text{m}^2$**
- **$1050 + 20\% (210) = \text{€}1260$** **incl. VAT**
- **$1260 - 25\% (315) = \text{€}945$** **€315 During sales**

Percentages Questions

- **Q2.** Calculate the cost of making 20 Lockers at a material cost of €32 per locker. Allow profit at 28%. Add Vat @ 21% and a cash discount of 2.5%.

- **Answer :**

- **20 x 32 = €640** material
- **640 + 28% (179.2) = €819.20** incl. profit
- **819.20 + 21% (172.03) = €991.23** incl. VAT
- **991.23 – 2.5% (24.78) = €966.45** cash discount

Percentages Questions

- **Q3.** A builder buys 6 job lots of handles for €105 which he then separates into 20 lots and sells for €35 plus vat @21% each. How much does he sell all the handles for.
How much profit does he make in total?

- **Answer :**

- **$20 \times 35 = 700$**

- **$700 + 21\% (147) = \text{€}847$**

sale of handles

- **$700 - 105 = \text{€}595$**

profit

Percentages Questions

- **Q4.** A Building merchant quotes €1876.23 ex vat for building material. What amount is payable when 21% VAT is added. A discount of 5% is offered if the builder pays by the end of the following month. How much will he save if he can pay his bill by that time?
- **Answer:**
- **$1876.23 + 21\% (394) = €2270.23$ incl. VAT**
- **$2270.23 - 5\% (113.51) = €2156.73$**
- **Save €113.51**

Percentages Questions

- **Q5.** Calculate the cost of sheeting an area measuring 6.8m x 5.5m with T &G sheeting. Allow 15% for cutting waste. The boards are 2.45m x 70mm and cost €20.75 for a bundle of 10.

- **Answer:**

- **$6.8 \times 5.5 = 37.4\text{m}^2$** **floor area**
- **$37.4 + 15\% (5.61) = 43.01\text{m}^2$** **incl. waste**
- **$2.45 \times 0.070 = 0.1715\text{m}^2$**
- **$43.01 \div 0.1715 = 250.78$ boards**
- **$250.78 \div 10 = 25.078$** **26 packs**
- **$26 \times 20.75 = \text{€}539.50$**

Percentages Questions

- **Q7.** An area 40m^2 is to be covered with 100mm wide boards. The boards are 2.5m long and cost €15.75 for a bundle of 12. Allow 15% for cutting waste. Calculate the cost of the flooring?

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- **Answer:**
- **$40 + 15\% (6) = 46\text{m}^2$**
- **$2.5 \times 0.100 = 0.25\text{m}^2$**
- **$46 \div 0.25 = 184$ boards**
- **$184 \div 12 = 15.33$ **16 packs****
- **$16 \times 15.75 = \text{€}252$**

