

Chapter 25: Fractions/Decimals/Percentages 3



We make a profit when we sell something for more than it cost us to buy.

}	€10 profit
	€40 cost paid

Sale price = cost price + profit

€50 = €40 + €10

profit = €10

1. Calculate the profit for each of these.

(a)  Cost: €275.
Sold for €399.99.

(b) Selling price: €12,750.
Cost price: €8,900. 

(c) 8 footballs cost €99.
They were sold for €15 each.

(d) A hat and a scarf cost €7.50 each.
Sold for a total of €19.85.



We make a loss when we sell something for less than it cost us to buy.

}	€25 loss
	€50 sale price


Sale price = cost price - loss


€50 = €75 - €25

loss = €25


2. Calculate the loss for each of these.

(a) A television was bought by a shop for €250, and sold for €189.99.


(b) Cost price: €125.50.
Sold for €79. 


(c) Cost: €1.99 each.
Sold altogether for €8. 

(d)  Sold for €159.95, cost €247.

(e) 7 bought at €8.75 each.
Sold for a total of €47.50. 

(f) Watches were sold for €11.90 each.
They were bought at €119.70 for 9 watches.


(g) 36 apples were bought for €15.
They were sold for 35c each. 

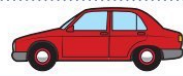
(h)  Oranges were sold at 45c each.
68 oranges cost the shopkeeper €35.70.


3. Write the missing amounts. A loss is written with a minus sign.

Cost Price	€59	€25		€53	€247	€89.49		
Profit/Loss	€19		-€29.50	-€17.01		€37.53	-€36.59	-€101.99
Sale Price		€49.99	€100		€149.99		€199.01	€247.50

4. Solve these profit or loss problems.

(a) A bookshop bought a box of 50 books for €299. If each book was sold for €9.99, calculate how much profit or loss the bookshop made. 

(b) Al's Autos sold a car for €23,499. If they had paid €18,750 for it, calculate the profit or loss made. 

Challenge A dealer bought 6 microwaves for a total of €1,176. She sold them at €179.50 each. Calculate her profit or loss on the microwaves. 

Profit or loss percentages

A A dealer paid €150 for a bike. He sold it for €180. What percentage profit did he make?

Cost price = €150
Sale price = €180



Profit = €30

Fraction profit $\rightarrow \frac{30}{150} \rightarrow \frac{3}{15} = \frac{1}{5}$

% profit $\rightarrow \frac{1}{5} \times \frac{100}{1} \rightarrow \frac{100}{5} = 20\%$

B Tina bought a tablet for €240. She sold it for €200. What percentage loss did she make?

Cost price = €240
Sale price = €200



Loss = €40

Fraction loss $\rightarrow \frac{40}{240} \rightarrow \frac{4}{24} = \frac{1}{6}$

% loss $\rightarrow \frac{1}{6} \times \frac{100}{1} \rightarrow \frac{100}{6} \rightarrow \frac{50}{3} = 16\frac{2}{3}\%$

1. Complete the chart. Calculate the percentage profit/loss for each of these. Losses are shown in brackets ().

Joe's Hardware Shop

	tool	selling price	cost price	profit/loss	percentage profit/loss
(a)		€15	€20	(€5)	$\frac{5}{20} \rightarrow$ ___ % loss
(b)		€21		€3	
(c)			€12.50	(€2.50)	
(d)		€17.50	€14		
(e)		€38.50	€35		
(f)		€4.50		€1.50	

2. Solve these problems.

(a) *Pro Surf* bought ten surfboards for a total of €1,500. The surfboards were sold for €200 each. What percentage profit was made on each surfboard?

(b) *Classic Cars* paid €9,000 for a vintage Ferrari and sold it for €11,250. What percentage profit did they make?



(c) *Harry's Holiday Store* bought 40 pairs of sunglasses for €500. They had to sell them for €10 each due to a wet summer. Calculate the overall percentage profit/loss.

(d) Find the percentage profit/loss on a skateboard bought for €36 and sold for €45.

(e) *Super Sports* bought 20 jerseys for €390 and 20 pairs of shorts for €350. They were sold in sets for €40.70 per set. What was the overall percentage profit/loss made by *Super Sports*?

Challenge *Fred's Fruit and Veg* bought a box of 50 pineapples for €40. Half of them were bad. The rest of them were sold for €2.20 each. Find the percentage profit or loss.



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Cost price and selling price

A By selling a bed for €600, a shop made a profit of 20%. What was the original cost of the bed?

Profit = 20%

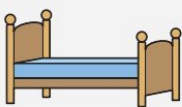
Fraction profit $\rightarrow \frac{20}{100} \rightarrow \frac{2}{10} = \frac{1}{5}$

Sale price = cost price + profit = $\frac{6}{5}$

$\frac{6}{5} = €600 \rightarrow$ (sale price)

$\frac{1}{5} = €100$

$\frac{5}{5} = €500 \rightarrow$ (cost price)



B A football was sold for a profit of 75%. The actual profit was €15. What were the cost and selling prices?

Profit $\rightarrow 75\% = \frac{3}{4}$ and Actual profit = €15

$\frac{3}{4} = €15$

$\frac{1}{4} = €5$

$\frac{4}{4} = €20 \rightarrow$ (cost price)

$\frac{7}{4} = €35 \rightarrow$ (sale price)



1. *Abbie's Antiques* bought and sold these items. How well did they do? Losses are in **brackets**.

Abbie's Antiques

	item	selling price	cost price	profit/loss	percentage profit/loss
(a)		€80		€16	
(b)			€60	(€15)	
(c)				(€21)	(30%)
(d)		€280			40%
(e)			€80		45%
(f)		€168			(16%)

2. Now solve these **profit** or **loss** problems.

(a) *Skate and Surf* made a 25% profit on all skateboards they sold. If they made €15 profit on one of them, what was the cost price?



(b) *The Fright Factory* bought ten Halloween masks for a total of €25. They want to make a 10% profit. At what price must they sell each mask?

(c) *Crazy Price Cars* made a 15% profit on a van they sold. If their profit was €690, what were the cost and selling prices of the van?



(d) Pam bought an old bicycle for €27. She spent €48 fixing it. She then sold it for a 12% profit. What was the selling price?



(e) *Whatever the Weather* bought 100 umbrellas for €500. If they sold 60 of them for a 20% profit and the rest for a 12½% profit, what was their total profit?

Challenge *Glen's Garage* bought a damaged car for €2,369. It cost the garage €2,131 to repair the car. At what price must they sell the car to make a profit of 18%?

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Fractions/Decimals/Percentages 3 – Shopping

1. Sunny Days Fruit and Veg



- If the shopkeeper bought a box of 25 apples for €5.00 and sold them all, what percentage profit did the shopkeeper make?
- The shopkeeper made a 20% profit on each coconut sold. How many coconuts did the shopkeeper sell yesterday if she made a profit of €6?
- How much did *Sunny Days* pay for a peach if they are selling them at a 25% profit?
- The shipping costs for the mangos were €50 for a crate of 100. If the mangos cost another €100 per crate to buy, what was the profit or loss on each mango?
- Sunny Days* makes a $22\frac{2}{9}\%$ profit on each pineapple it sells. How much does a pineapple cost them?
- The following week, coconuts were on sale at a discount of $7\frac{1}{2}\%$. What was the new selling price?

2. Adrenaline Sports – Sale Now On!



- If a mountain bike originally sold for €300, what is the sale price?
- A kart now costs €270. What was the old price?
- If a skateboard has been reduced in price by €25.50, how much was it originally?
- A BMX originally sold for €480. What is the sale price?
- Which of the four items was reduced by the least amount of money?
- Express the sale price of a skateboard as a percentage of the sale price of a kart. (Round to the nearest full per cent.)

- Challenge**
- A downhill mountain bike cost the shop €300 to buy and they were making a 10% profit at the old selling price. How much of a loss are they now making?
 - If a kart was sold in the sale for €267, what was the original selling price?

Fractions/Decimals/Percentages 3

Cappuccino	€3.00
Regular Coffee	€2.50
Tea	€1.50
Scone	€2.00
Carrot Cake	€3.50
Toast	€0.50

$12\frac{1}{2}\%$ service charge on orders over €10

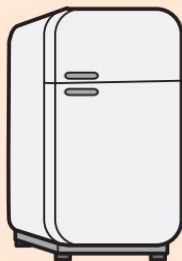


Study the menu. Answer the questions.

1. Cake and Coffee Café

- If Maria bought four cappuccinos, what would the service charge be?
- Barry bought two regular coffees and two carrot cake slices. How much did he pay in total including service charge?
- If Eanna wants to leave an $11\frac{1}{4}\%$ tip for his regular coffee and scone, how much should he leave?
- The Café buys its loaves of bread for €3 each. If it makes 10 slices of toast per loaf, what is the percentage profit on each slice of toast it sells?
- If a customer bought two of everything, how much would they have to pay including service charge?
- Richard bought 4 regular coffees, 8 toast and 4 scones. What change had he from €30?

2. Everything Electric



- The shop paid €3,000 for 10 laptops. How much must they sell each of them for to make a profit of $66\frac{2}{3}\%$?
- Everything Electric* reduced the price of a speaker system from €250 to €150. What percentage discount is that?
- A television is on sale at 40% off. The sale price is €465. What was the television selling for before the sale?
- A washing machine costs €299 and a drier costs €199. If you buy both of them together, you get a $33\frac{1}{3}\%$ discount. What would you pay for both together?
- An X-Box costing €255 now has a 4% discount. A Playstation that used to cost €299 is now discounted by 12%. Which item is (a) cheaper and (b) by how much?
- Everything Electric* makes a $37\frac{1}{2}\%$ profit on sales of its most expensive smartphone. If their profit is €196.50, what does it sell for?
- An American style fridge-freezer is on sale for €1,375. If this is a discount of $16\frac{2}{3}\%$, how much was it selling for before the sale?

Challenge



A tablet costs the shop €200 to buy and was on sale for €300. By what percentage will they have to increase the sale price if they want to make a 75% profit on it?