4 Ava records the number of kilometres she drives each month.
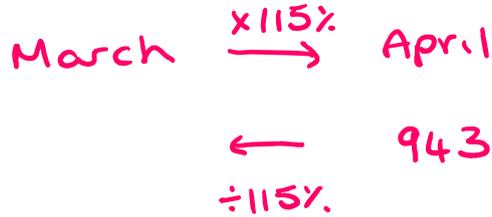
In April, Ava drove 943 kilometres.
This is 15% more than the number of kilometres she drove in March. ↑ 15%. (x 115%.)

Work out the number of kilometres Ava drove in March.

March $\xrightarrow{\times 115\%}$ April

⟵ 943

÷115%.

943 ÷ 115% = 820 km

.... kilometres

(Total for Question 4 is 3 marks)

4 N is a number.
   17% of N is 357

(a) Work out the value of N

$17\% \times N = 357$

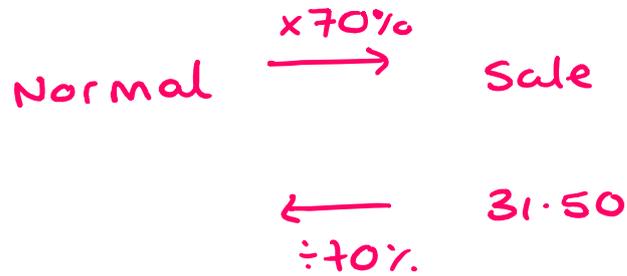$N = \dfrac{357}{17\%}$

$N = 2100$

$N =$ ....

(2)

5 In a sale, normal prices are reduced by 30%
   The sale price of a T-shirt was 31.50 euros.

$\downarrow 30\% \quad (\times 70\%)$

(b) Work out the normal price of the T-shirt.

$\times 70\%$

Normal $\longrightarrow$ Sale

$\longleftarrow$ 31.50
$\div 70\%$

$31.50 \div 70\% = 45$ euro

.... euros

(3)

(Total for Question 5 is 6 marks)

6

P 6 2 6 5 3 A 0 6 2 4

6   Juan wants to buy a ticket to fly from Madrid to Berlin.

He finds two different types of ticket he can buy in a sale, ticket **A** and ticket **B**

$\downarrow \frac{1}{6}$

$\times \frac{5}{6}$

ticket **A**
$\frac{1}{6}$ off normal price

$\downarrow 20\%$

$\times 80\%$
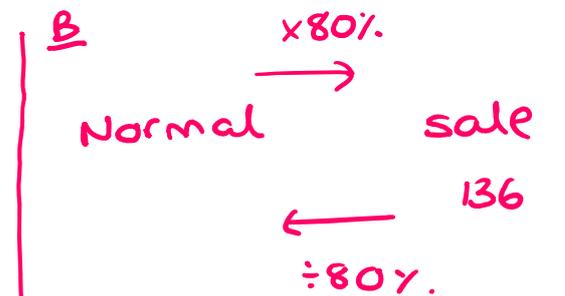
ticket **B**
20% off normal price

The sale price of ticket **A** is 140 euros.
The sale price of ticket **B** is 136 euros.

Work out the difference between the normal price of ticket **A** and the normal price of ticket **B**

A

$\xrightarrow{\times \frac{5}{6}}$

Normal   Sale

$\xleftarrow{\div \frac{5}{6}}$ 140

$140 \div \frac{5}{6} = 168$

B

$\xrightarrow{\times 80\%}$

Normal   sale

$\xleftarrow{\div 80\%}$ 136
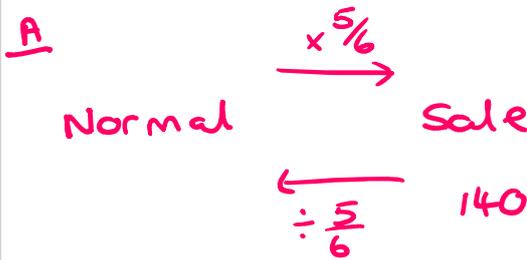
$136 \div 80\% = 170$

$170 - 168 = 2 \text{ euro}$

.... euros

(Total for Question 6 is 4 marks)

6 On Wednesday, the price of 1 litre of petrol was £1.26
   The price of petrol on Wednesday was 5% more than the price of petrol on the ↑5%
   previous Monday.   ×105%

   Calculate the price of 30 litres of petrol on the previous Monday.

×105%

Mon ——→ wed
        ←——   1.26
       ÷105%

1.26 ÷ 105% = £1.20 per litre

£1.20 × 30 = £36

£ ....

(Total for Question 6 is 3 marks)

6 Marie changes her job.

Her salary decreases by 6%
Her new salary is 23 030 euros.

↓ 6% (× 94%)

(b) Work out Marie's salary before she changes her job.

× 94%
Old ⟶ New
⟵ 23030
÷94%
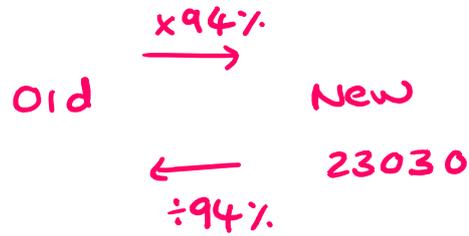
23030 ÷ 94% = 24500

.... euros

(3)

(Total for Question 6 is 7 marks)

6 **After** the increase, the price of lasagne is $9.45

(b) Work out the price of lasagne before the increase.

x 125%.
→

Before   After

9.45

←
÷125%.
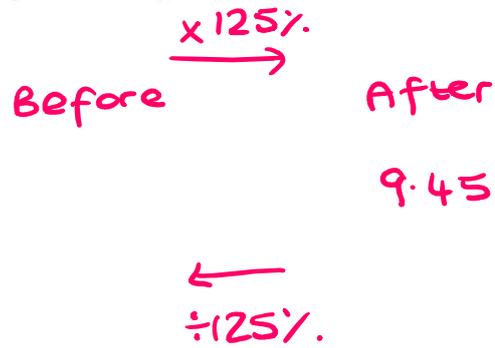
9.45 ÷ 125% = 7.56

$ ....
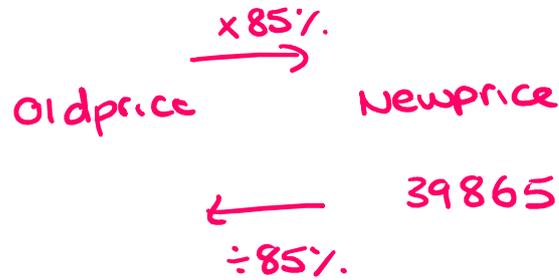
(3)

(Total for Question 6 is 6 marks)

6 Kylie bought a van.

After 1 year, the value of the van was $39 865
During this year, the value of the van decreased by 15%

$\downarrow$ 15% (×85%)

(b) Work out the value of the van when Kylie bought it.

×85%

Oldprice   Newprice

                        39865

÷85%

39865 ÷ 85% = $46900

$...

(3)

(Total for Question 6 is 7 marks)

7   Shop **A** and Shop **B** have offers for buying the same type of laptop.

The normal price of the laptop in Shop **A** is different to the normal price of the laptop in Shop **B**

Shop A	**Shop B**
Our normal price £475	Get 15% off our normal price
Get 16% off our normal price	Only pay £408

↓ 15%
(x85%)

Which shop gives more money off their normal price?
Show your working clearly.

Ⓐ   Normal = 475

475 × 16% = £76 discount

x85%
Ⓑ   Normal ⟶ Sale .
              ← 408
        x85%

408 ÷ 85% = 480

480 − 408 = £72 discount

Ⓐ is bigger discount

(Total for Question 7 is 4 marks)

8 A cinema increased the cost of an adult ticket by 12%   ↑12%   (×112%)

After the increase, the cost of an adult ticket was £18.20

Work out the cost of an adult ticket before the increase.

×112%

Old → New

18.20

÷112%
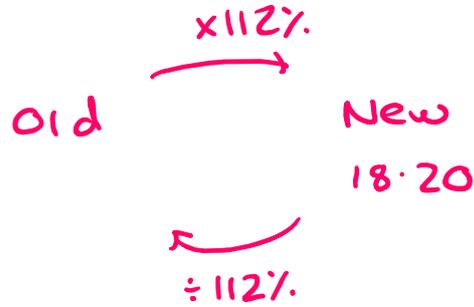
18.20 ÷ 112% = £16.25

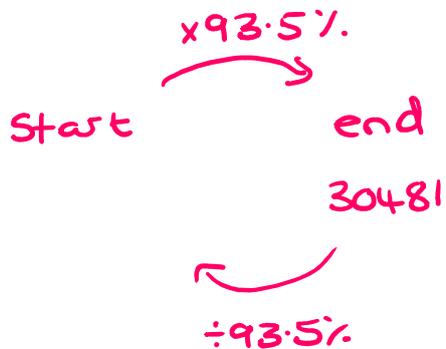£...

(Total for Question 8 is 3 marks)

7 Wang invested P yuan.
The value of his investment decreased by 6.5% each year. ↓6.5% (× 93.5%)

At the end of the first year, the value of Wang's investment was 30481 yuan.

(b) Work out the value of P.

×93.5%

Start   end

30481

÷93.5%

30481 ÷ 93.5% = 32600

P = ...

(3)

(Total for Question 7 is 6 marks)

P66297A0828

7   Rami bought a house on 1st January 2015

In 2015, the house increased in value by 15%   ↑15% (×115%)
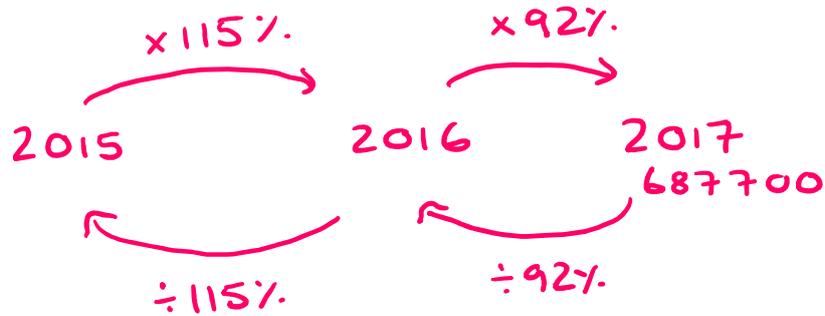In 2016, the house decreased in value by 8%   ↓8% (×92%)

On 1st January 2017, the value of the house was \$687 700

(b) What was the value of the house on 1st January 2015?

×115%   ×92%

2015   2016   2017
                               687700

÷115%   ÷92%

$687700 \div 92\% = 747500$

$747500 \div 115\% = 650000$

\$...

(3)

(Total for Question 7 is 6 marks)

7   Jalina gets a salary increase of 5%
    Her salary after the increase is HK$252 000

↑5% ×105%

(b) Work out Jalina's salary before the increase.
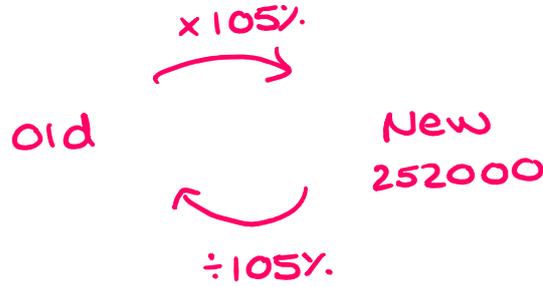
×105%

old   *New*
         252000

÷105%

252000 ÷105% = $240 000

HK$...

(3)

(Total for Question 7 is 6 marks)

7   In a sale, the normal price of a hat is reduced by 15%   ↓15%.   (85%.)
    The sale price of the hat is 20.40 euros.

    Work out the normal price of the hat.

x85%.

Normal → Sale
              20·40
÷85%.
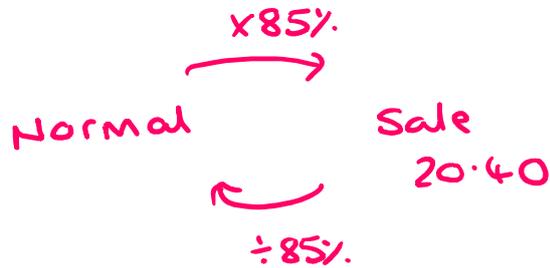
20·40 ÷ 85% = 24 euro

.... euros

(Total for Question 7 is 3 marks)

8 In a sale, all normal prices are reduced by 17% ↓ 17%.   × 83%.

The sale price of a fridge is 6225 rupees.

Work out the normal price of the fridge.

× 83%.

Old → Sale 6225

÷83%.
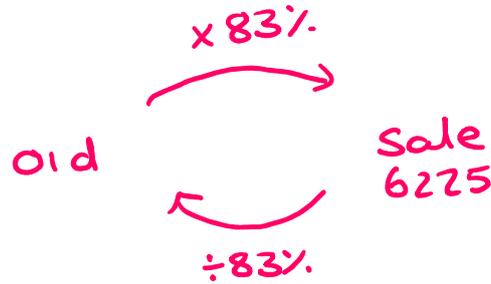
$$6225 \div 83\% = 7500$$

.... rupees

(Total for Question 8 is 3 marks)

8   The table shows the cost, in euros, of Brigitte's car insurance in each of the years 2016, 2017 and 2018

Year	2016	2017	2018
Cost of insurance (euros)	500	545	592

Brigitte says,

"The percentage increase in the cost of my car insurance from 2017 to 2018 is more than the percentage increase in the cost of my car insurance from 2016 to 2017"

(a) Is Brigitte correct?
    You must show how you get your answer.

$\dfrac{Change}{original} \times 100$

$\underline{2017 \to 2018}$

$592 - 545 = 47$

$\dfrac{47}{545} \times 100 = 8.62\%$

$\underline{2016 \to 2017}$

$545 - 500 = 45$

$\dfrac{45}{500} = 9\%$

She is incorrect

(4)

Henri wants to insure his car.

He gets a discount of 15% off the normal price. $\downarrow 15\% \Rightarrow \times 85\%$
Henri pays 952 euros for his car insurance after the discount.

(b) Work out the discount that Henri gets.

$\times 85\%$

Before   After

                952

$\div 85\%$

$952 \div 85\% = 1120$

$1120 - 952 = 168$ discount

.... euros

(3)

(Total for Question 8 is 7 marks)

Turn over ▶

P 5 9 7 6 2 A 0 9 2 8

8 The table gives information about the average house price in England in 2018 and in 2019

Year	2017	2018	2019
Average house price (£)		228314	231776

The average house price in 2019 was 7.7% greater than the average house price in 2017

(b) Work out the average house price in 2017
Give your answer correct to 3 significant figures.

Handwritten working:

↑ 7.7% ⟹ ×107.7%

×107.7%

2017   2019
              £231776

÷107.7%

231776 ÷ 107·7% = 215 205·20

= 215000

£ ....

(3)

(Total for Question 8 is 5 marks)

8 In 2018, the population of Sydney was 5.48 million.
This was 22% of the total population of Australia.

Work out the total population of Australia in 2018
Give your answer correct to 3 significant figures.

$\times 22\%$

Australia   Sydney
                      5.48

$\div 22\%$
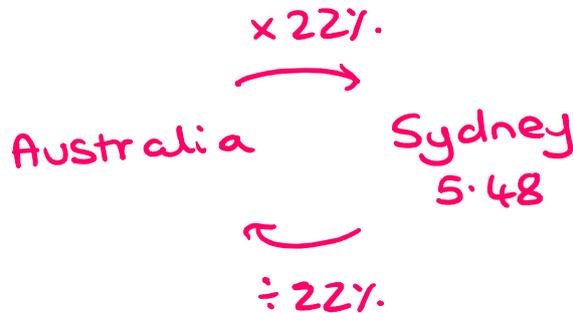
$5.48 \div 22\% = 24.909$ million

$= 24.9$ million

.... million

(Total for Question 8 is 3 marks)

9   In a sale, normal prices are reduced by 20%   ↓20% (×80%)

A bag costs 1080 rupees in the sale.

Work out the normal price of the bag.

×80%

Normal   Sale
                1080

÷80%
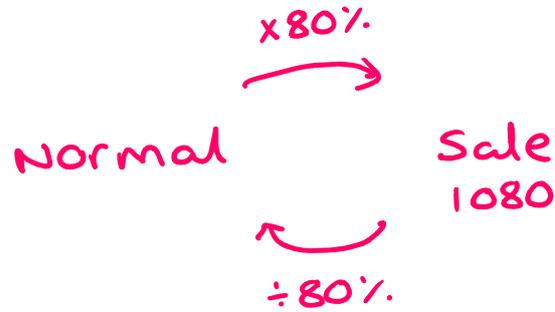
1080 ÷ 80% = 1350

.... rupees

(Total for Question 9 is 3 marks)

P 6 2 6 5 2 A 0 1 0 2 8

10 Jonty has a storage container in the shape of a cuboid, as shown in the diagram.
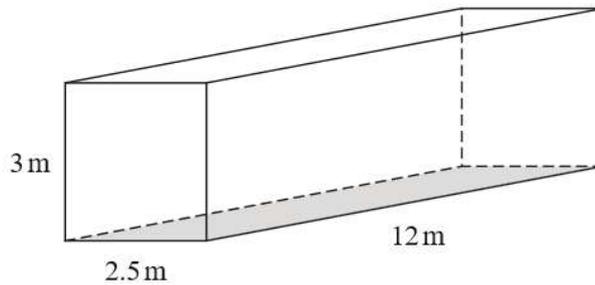
Diagram **NOT** accurately drawn

3 m

2.5 m

12 m

Jonty is going to paint the outside of his storage container, apart from the base which is shown shaded in the diagram.
He needs enough paint to cover the four sides and the top.

Each tin of paint covers an area of $15\,m^2$

The cost of each tin of paint recently increased by 10%
After the increase, the cost of each tin of paint is £26.95

↑10% (×110%)

Jonty says

"**Before** the increase, I could have bought enough paint for less than £200"

Show that Jonty is correct.
Show your working clearly.

Total area = (3×2.5) + (3×2.5) + (3×12) + (3×12)
            + (2.5×12)

= 117 m²

Paint needed $\frac{117}{15}$ = 7.8 tins → 8 tins

×110%

Before   After
£26.29

26.95 ÷ 110%
= £24.50 per tin

÷110%

24.50 × 8 = £196   he could afford it

(Total for Question 10 is 6 marks)

11 Chengbo sold a house for 180 000 yuan.

The amount for which he sold the house is 24% more than the amount he paid for the house.

(a) Work out how much Chengbo paid for the house.
    Give your answer correct to 3 significant figures.

$\times 124\%$

Bought ⟶ Sold
                180000

$\div 124\%$
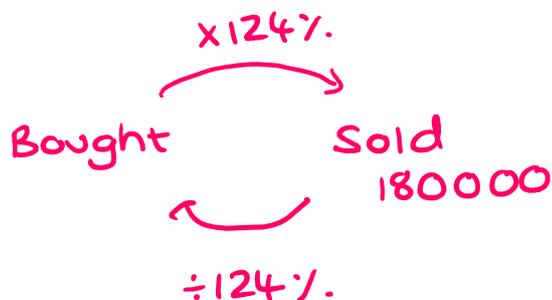
$180000 \div 124\%$

$= 145161 \cdot 29$

$= 145\,000$

.... yuan

(3)

12   The company's income in 2017 was $500 000 more than the company's income in 2016

The company's income in 2017 was 8% more than the company's income in 2016

(b) Work out the company's income in 2016

$\times 108\%$

2016   2017

8% = 500 000

2016 income × 8% = 500000

2016 income = 500 000 ÷ 8%

= 6 250 000

$...

(3)

(Total for Question 12 is 7 marks)

13 Antoine is going on holiday.
He makes 3 separate payments to cover the total cost of his holiday.

The following table shows how much money Antoine pays to the holiday company.

Payment	Amount paid
Payment 1	$\frac{3}{8}$ of the total cost
Payment 2	45% of the total cost
Payment 3	$406

Work out how much Antoine has to pay for Payment 2

$\frac{3}{8} + 45\% = 0.825$

82.5% paid in ① + ②

100% − 82.5% = 17.5% in payment ③

$406 = 17.5%

Total × 17.5% = 406

Total = 406 ÷ 17.5%

= 2320

$ ....

(Total for Question 13 is 5 marks)