

# Teaching The Fundamentals: Level 2 Original Value After Percentage Change

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# Original Value After Percentage Change

What does the Chief Examiner say?

- The concept of original value after percentage change is often not well answered.
- Working out is not usually seen and when it is, it is often just jotting down values without any process shown.
- If values written are incorrect then marks are lost.
- Practice and encourage learners to write out the exact buttons pressed on calculators to show processes, e.g. write down  $80\% = £1200$ , then  $1\% = 1200 \div 80 = 15$  and then  $15 \times 100 = 1500$  is one possible approach which seems to work when followed

# Original Value After Percentage Change

Let's take a look at a question

Gosia runs a business.

She needs to buy a new laptop.

Gosia sees this advert.



She needs to work out how much VAT she is paying on the laptop.

Calculate the VAT.

| Question                 | Process                           | Mark | Mark Ref | Evidence  |
|--------------------------|-----------------------------------|------|----------|---|
| Q1                       | Process to find original price    | 1 or | A        | e.g. $(1599.99 \div 120) \times 100$<br>(=1333.325) |
|                          | Calculates difference to find VAT | 2 or | AB       | e.g. $1599.99 - '1333.325'$<br>(=266.665)           |
|                          | Accurate figure                   | 3    | ABC      | £266.66(5) OR £266.67                               |
| Total marks for question |                                   | 3    |          |   |

# Original Value After Percentage Change

## Discovery Activity

- Take a look at this question.

The cost of an item is to be increased by 20%.

What do we need to do to the old cost to get the new cost?

$$\times 0.2 \times 1.2 \div 0.2 \div 1.2$$

- What are the answers for each sum if the coat costs £100 before the increase?
- What do these answers mean?
- $100 \div 1.2 = 83.33$  takes some explaining 😊

$$\begin{aligned} 100 \times 0.2 &= 20 \\ 100 \times 1.2 &= 120 \\ 100 \div 0.2 &= 500 \\ 100 \div 1.2 &= 83.33 \end{aligned}$$

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## Top Tips

- Learners would benefit from knowing what percentages are as decimals.
  - Ask them to match decimals to percentages.
  - Ask them to work out decimal and percentage equivalencies.
  - Is there anything they notice?
- Learners need to remember to add the percentage on at the beginning.
- They can always find 1% by dividing the value plus percentage increase then multiplying by 100.

# Original Value After Percentage Change

One More Question

A garage sold 25% more cars  
than last year.

The number it sold this year is  
120.

What was the original number?

# Original Value After Percentage Change

## Numberless Problem-Solving

A garage sold a percentage more cars this year than last year.

The garage knows how many cars this represents.

How can they work out how many cars were sold last year?



Number of cars sold this year.

Divided by

The percentage increase plus 100

Multiplied by

100

# Original Value After Percentage Change

## Scaffolded Question

A garage sold 25% more cars than last year.

The number it sold this year is 120.

What was the original number?



How many cars were sold this year?

What percentage of last year's number does this represent?

What do you need to do to find the percentage change?

What was the original number?





Pearson