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**FUNCTIONAL SKILLS**

Maths Level 2



**Area: numbers and the number system**

Criterion 6: calculate percentage change (and size increase and decrease), and original value after percentage change

**Calculating percentage increase**

Formula for percentage increase:

The percentage increase can be calculated in 3 steps.

Step 1: Subtract the original value from the new, increased value

Step 2: Divide the amount of increase by the original value

Step 3: Multiply the answer by 100

**Question 1**

Calculate the percentage increase from 120 to 150

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**Question 2**

Calculate the percentage increase from 330 to 396

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**Question 3**

Calculate the percentage increase from 690 to 800

Round your answer to the nearest whole number.

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**Exam practice 1**

Last year, a company made a profit of £4,790. This year, the company’s profit is £6,083. Calculate the percentage increase.

Round your answer to the nearest pound.

(4 marks)

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**Calculating percentage decrease**

Formula for percentage decrease:

The percentage decrease can be calculated in 3 steps.

Step 1: Subtract the new value from the original value

Step 2: Divide the amount of decrease by the original value

Step 3: Multiply the answer by 100

**Question 4**

Calculate the percentage decrease between 500 and 350

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**Question 5**

Calculate the percentage decrease between 1230 and 1107

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**Question 6**

Calculate the percentage decrease between 456 and 412

Round your answer to 1 decimal place.

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**Exam practice 2**

A taxi company had an average of 7,520 bookings last month.

This month, the same taxi company has an average of 7,294 bookings.

Calculate the percentage decrease.

Using these figures, predict how many bookings the hotel will have next month.

(6 marks)

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**Calculating the original value after a percentage change**

To calculate percentage change, there are 3 steps.

Step 1: Add or subtract the percentage from 100% to calculate the remaining percentage

Step 2: Divide the new amount by the percentage

Step 3: Multiply the answer by 100

**Question 7**

A DVD is reduced by 15% in a sale. The sale price is £4.25

What was the original price?

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**Question 8**

A pair of trainers have been reduced by 24%

Their new price is £68.40

What was the original price?

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**Question 9**

A book club have read a total of 496 books this year.

This is a 12% increase on last year.

How many books did the club read last year?

Round your answer to the nearest whole number.

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**Calculating percentage change**

To calculate percentage change using 2 values, there are 3 steps.

Step 1: Find the difference between the values

Step 2: Divide the difference by the original value

Step 3: Multiply the answer by 100 to find the percentage

**Question 10**

A household bill has decreased from £120 per month to £98 per month.

Calculate the percentage change.

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**Question 11**

You sell some trousers for £32

You purchased them for £28

What is the percentage of profit?

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**Exam practice 3**

A retail outlet tracks its amenities sales in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Café | Restaurant | Clothing shop |
| April | 6010 | 7600 | 4500 |
| May | 7540 | 8000 | 6750 |

The owners want to predict the number of sales in June.

They have asked you to calculate the percentage changes between April and May.

Use those percentages to predict the number of sales for each amenity in June.

Estimate the predicted number of sales for all 3 shops.

(6 marks)

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| --- |
| Café: \_\_\_\_\_\_\_\_\_\_\_\_  Restaurant: \_\_\_\_\_\_\_\_\_\_\_\_  Clothing shop: \_\_\_\_\_\_\_\_\_\_\_\_ |

**Answers**

**Calculating percentage increase**

**Question 1**

25%

**Question 2**

20%

**Question 3**

15.942 ≈ 16

**Exam practice**

**Exam practice 1**

26.973 ≈ 27%

**Calculating percentage decrease**

**Question 4**

30%

**Question 5**

10%

**Question 6**

9.6491 ≈ 9.6

**Exam practice**

**Exam practice 2**

The percentage decrease is 3%

The predicted number of bookings for next month is approximately 7075.

**Calculating the original value after a percentage change**

**Question 7**

£5

**Question 8**

£90

**Question 9**

443

**Calculating percentage change**

**Question 10**

A decrease of approximately 18.3%

**Question 11**

An increase of approximately 14.3%

**Exam practice**

**Exam practice 3**

Calculate the percentage change for the café.

7540 – 6010 = 1530

1530 ÷ 6010 = 0.2546

0.25457 x 100 = 25.46%

Calculate the percentage change for the restaurant.

8000 – 7600 = 400

400 ÷ 7600 = 0.0526

0.0526 x 100 = 5.26%

Calculate the percentage change for the clothing shop.

6750 – 4500 = 2250

2250 ÷ 4500 = 0.5

0.5 x 100 = 50%

Calculate the estimated June sales for the café.

7540 x 1.2546 = £9,459.68

Calculate the estimated June sales for the restaurant.

8000 x 1.0526 = £8,420.80

Calculate the estimated June sales for the clothing shop.

6750 x 1.5 = £10,125

**Your functional skills exam**

Your functional skills exams will consist of 2 papers.   
These papers will take place over the following time periods:

* Non-calculator paper – 40 minutes
* Calculator – 1 hour 50 minutes

Further information on the format that your test will take can be obtained from your training provider.

**Hints and tips**

* Find out what format your exam will be in. It may be paper-based   
  or on-screen.
* Plan what you are going to revise in advance. Don’t leave it until the last minute.
* Do as many past papers as you can so you are prepared for the day. If possible, try to complete the past papers following the same format as the actual exam.
* Find a quiet place to study and revise. It helps to sit at a table or a desk, don’t revise in bed.
* Don’t stay up all night revising the night before your exam. It’s important to have a good rest so you feel refreshed and ready to go.
* Read the question 3 times. The first time to ensure you understand what is being asked, the second time to get an understanding of what you need to do, and a third time to figure out exactly what maths techniques you should be applying.
* If you are struggling with a question, skip it and come back to it later. Try not to sit getting worked up about a difficult question, it will only waste exam time. Move on and come back to it after you have answered the other questions.
* Take note of the number of marks available. This will give you an indication of how much working out you must show. For example, 1 mark will need an answer only and more marks will need you to show your working out.
* When you’ve finished the exam, go back and check your answers. If you still have time remaining, use it to check your answers and when you have checked your answers check them again.