

Non-calculator Questions

NCFE

1.

(a) Asha often goes swimming at Upton leisure centre.

She pays £5.20 each time she swims.

Next month the price will increase by 12.5%

How much more will Asha need to pay for each swim?

Give your answer in pence.

[2 marks]

Your answer:	pence

(b) £5.20 is 30% more than the price at Downton leisure centre.

Calculate the price at Downton leisure centre.

[2 marks]

Your answer:	£

2.

The old world record for the longest knitting needles was 3.98 m

The new world record is 11% longer.

What is the new world record for the longest knitting needles?



Give your answer in m

[2 marks]

Paper	
Your answer:	m

Highfield

3.

On Mondays, Highfield Vets are open from 8am to 8pm.

On Tuesdays they are open from 8am to 9pm.

What is the percentage increase in opening hours from Monday to Tuesday?

Show your working out and write the answer in the box below.

(3 marks)

Answer: _____%

Calculator Questions

Edexcel

1.

Jim owns a small business.

The table shows information about the weekly wage of the 40 workers.

Weekly wage (£)	Number of workers
320	10
370	13
420	8
470	7
520	2

Jim wants to increase the mean wage by 4%, plus £10

Jim thinks the new mean weekly wage of these workers will be more than £415

Is Jim correct?
You **must** show your working.

(6)

2.

David reads this advert on his county council website.

*70% of the area of woodland in the county is native woodland.
This means there are 350 km² of native woodland in the county.*

Work out the area of woodland in the county that is **not** native woodland.

(3)

km²

3.

Kevin buys a second-hand car for £7346

He knows that the car is worth 27% less than when it was brand new.

Kevin thinks that the car cost more than £9000 when brand new.

Is Kevin correct?

Show why you think this.

(3)

4.

Airon is a festival promoter.

He says

“In 2019 I sold 105 276 tickets.

This is 7% less than the number of tickets I sold in 2018.”

(a) How many tickets did Airon sell in 2018?

(3)



(b) Show a check of your answer.

(1)

NCFE

5.

Dec needs to pay £908.64 each month for his mortgage and other bills.

This is 45% of his monthly income.

What is Dec's monthly income?

Give your answer to the **nearest ten pounds**.

[2 marks]

Your answer:	£

6.

Mr Patel pays Dan £250 to clean his patio.

The £250 includes VAT at 20%

How much was the bill before the VAT was added?

[2 marks]

Your answer:	£

7.

Rafa and his friends cycle to keep fit.

They want to reduce the mean time it takes them to cycle 10 km

Their target is to reduce the time by 11% within 12 weeks.

This table shows their times in **Week 1** and **Week 12**.

	Time (minutes) to cycle 10 km	
	Week 1	Week 12
Ann	26.3	23.9
Mike	22.0	20.2
Rafa	28.1	25.7
Ali	24.9	20.4
Maria	18.4	18.1
Luke	21.7	20.7
Becky	20.3	17.3

Has the group achieved its target?

Show how you decide.

[4 marks]

Your answer:

8.

Beth is on a work placement.
The company makes biscuits.

In 2018 it reduced the number of biscuits in each packet.

The weight of each biscuit stayed the same.

The weight of a packet went from 135 g to 108 g

The 135 g packet contained 25 biscuits.

How many fewer biscuits did the 108 g packet contain?

[2 marks]

--

Your answer:

biscuits

9.

The table shows the number of people attending Speed Awareness Courses each year from 2014 to 2018:

Year	Total number of people
2014	1 355 796
2015	1 403 555
2016	1 390 880
2017	1 413 598
2018	1 445 817

Jed says the mean number of people attending each year for 2017 and 2018 is over 3% percent higher than the mean number for 2014 to 2016.

Is Jed right?

Show how you decide.

[4 marks]

Your answer:

10.

The company's income in 2019 was £863 490

This was 7% higher than in 2018

Work out the company's income in 2018

[2 marks]

Your answer:	£

11.

This is Eli's electricity bill for the first quarter of this year:

Total electricity used	£211.90
Dual fuel discount	-£14.90
VAT	£9.85
Total including VAT	£206.85

VAT is calculated after discount.

What percentage has been used to calculate the VAT?

[3 marks]

Your answer:

%

12.

Kamrul looks at his quarterly water bill.

Total volume of water used this quarter: 118m^3

This is 23% less than the same quarter last year.

Work out the volume of water Kamrul used for the same quarter last year.

Give your answer to 1 decimal place.

[2 marks]

Your answer:	
m^3	

13.

Abdul buys a new oven for the kitchen.

The normal price of the oven is £629

Abdul gets 18% discount on the price of the oven.

Decrease 629 by 18%

[2 marks]

Your answer:	

14.

Chris knows that this year the average house price in his area is £197 200

He expects this average price to increase by 2.1% next year.

Does Chris expect the average house price next year to be greater than £200 000?

Show how you decide.

[2 marks]

Your answer:	

Level 2 Maths Percentage Change exam Questions

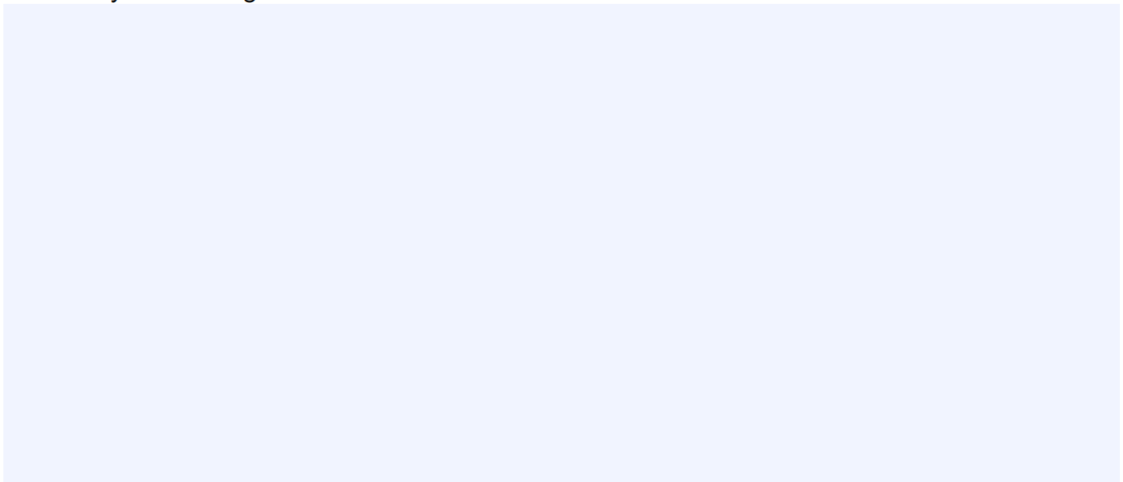
City & Guilds

15.

A newspaper report says that a company made £700,000 profit last year. It says this was 12% more than the year before.

Work out how much profit the company made the year before.

Show all your working



Profit £

(3 marks)

16.

A shop has a sale.
There is 30% off all black tag items.



One day this notice appears in the shop.



A customer complains that the notice is misleading because it is not true.

Is the customer correct?

Explain your decision. Include calculations to support your decision.

Decision (tick one box) Yes No

Show all your working

Explanation and supporting calculations.

(3 marks)

17.

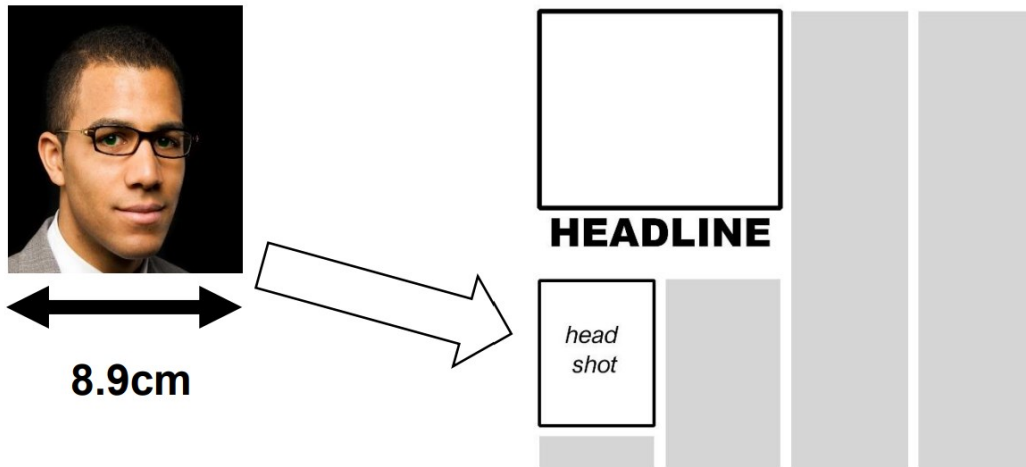


What is the price of the phone before VAT of 20% is added?

(1 mark)

18.

An editor needs to change the width of this photo to fit in a magazine.



The photo needs to be 32 mm wide.

What percentage of the original width will the changed photo be?

Show your working

_____ %

(2 marks)

19.

The Chairperson of a committee needs to write a report for a council meeting.

She needs to compare the fly tipping incidents reported in the **local area** with the fly tipping incidents reported **nationally**.

National Report

This year local authorities in England dealt with an **increase of 8%** of fly tipping incidents on those reported in last year.

This table shows the numbers of fly tipping incidents reported in the local area.

Year	Numbers of fly tipping incidents reported
Last year	11 193
This year	11 649

What will the Chairperson write in her report about the comparison between the local incidents and the national incidents? Explain your answer using figures.

Show your working

Explanation

(4 marks)

Level 2 Maths Percentage Change exam Questions

Highfield

20.

Highfield Builders is planning to build some new apartments in Highfield Town. The apartments will be ready to sell in 2025.

Your manager has asked you to research the selling prices of apartments in Highfield Town and you find this information:

Selling prices in the year 2005 (£)	Selling prices in the year 2015 (£)
54,050	132,000
72,000	105,500
68,000	98,500
49,000	143,000
56,500	110,250
49,900	172,600
73,250	
63,500	

What will be the mean selling price of an apartment in 2025 if the mean price rises by the same percentage as it did between 2005 and 2015?

Show your working out and write the answer in the box below.

(6 marks)

Answer: £ _____

21.

These are your figures for selling candles and photo frames last year.

Month	Sales	Month	Sales
January	£212	July	£298
February	£194	August	£275
March	£245	September	£306
April	£302	October	£314
May	£275	November	£339
June	£242	December	£364

What is the percentage increase in your mean monthly profit from the first 6 months to the mean monthly profit from the second 6 months?

Show your working out and write the answer in the box below.

(5 marks)

Answer: _____%

Level 2 Maths Percentage Change exam Questions

22.

Highfield Bank records the profit (£) made over the previous 2 years:

Quarter	2017	2018
1	900,000	950,000
2	750,000	850,000
3	550,000	600,000
4	550,000	850,000

What is the percentage increase in the mean quarterly profit from 2017 to 2018?

Show your working out and write the answer in the box below.

(5 marks)

Answer: _____ %

23.

You are working for Highfield Property Developers.

The company buys properties, renovates them and then sells them.

They hope to make a profit on every property they sell.

These are the properties the company has bought and sold in the last 6 months.

Type of property	Purchase price	Renovation costs	Selling price
House	£299,950	£27,500	£355,250
Flat	£99,500	£7,450	£118,000
Flat	£135,000	£12,995	£175,495
House	£175,250	£59,000	£225,000
House	£325,000	£12,000	£348,000
Flat	£69,000	£9,050	£95,000
House	£225,450	£16,595	£275,000

$$\text{Profit} = \text{selling price} - (\text{purchase price} + \text{renovation costs})$$

The manager says

'The mean profit on a flat is about 12% more than the mean profit on a house.'

Is the manager correct?

Show your working out and write the answer in the box below.

(7 marks)

Answer: _____

AQA

24.

Circle the calculation that increases £260 by 17%

[1 mark]

$260 + 0.17$

260×0.17

$260 + 1.17$

260×1.17

25.

Work out the percentage decrease from 5200 to 4108

[3 marks]

Answer _____ %

26.

The company sells large candles for £9.60 each, including 20% VAT.

How much VAT is there on each large candle?

[3 marks]

Answer _____

27.

Increase 1670 by 27%

[2 marks]

Answer _____

28.

Fran wants to buy a new bike for the race.

She sees this offer.

<p>Racing bike £708 including VAT at 20%</p> <p>SPECIAL OFFER WE PAY THE VAT</p>
--

Fran has £600 to spend.

Can she afford the bike?

You **must** show your working.

[3 marks]

29.

Jim is thinking of buying solar panels.

The price of these panels has decreased by 27% since 2016

Jim would need to pay £4803.40 for the panels now.

How much would the panels have cost in 2016?

[3 marks]

Answer £ _____