Write your name here

Surname	Other names

Pearson Edexcel Functional Skills

Centre Number | | | | | |

Candidate Number | | | | |

Mathematics

Level 2

8 – 12 January 2018

Time: 1 hour 30 minutes

Paper Reference

FSM02/01

You must have:
Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, compasses.

Total Marks

My signature confirms that I will not discuss the content of the test with anyone until the end of the 5 day test window.

Signature: _____

Instructions

- Use a **black** ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Sign the declaration.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**

Information

- The total mark for this paper is 48.
- The marks for each question are shown in brackets
  – *use this as a guide to how much time to spend on each question.*
- **You must show clearly how you get your answers because marks will be awarded for your working out.**
- **Check your working and your answers at each stage.**
- **This sign shows where marks will be awarded for showing your check.**

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.

Turn over ▶

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Pearson

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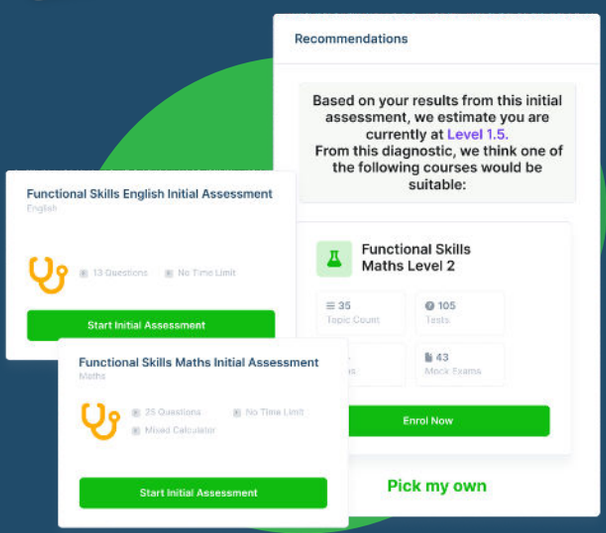
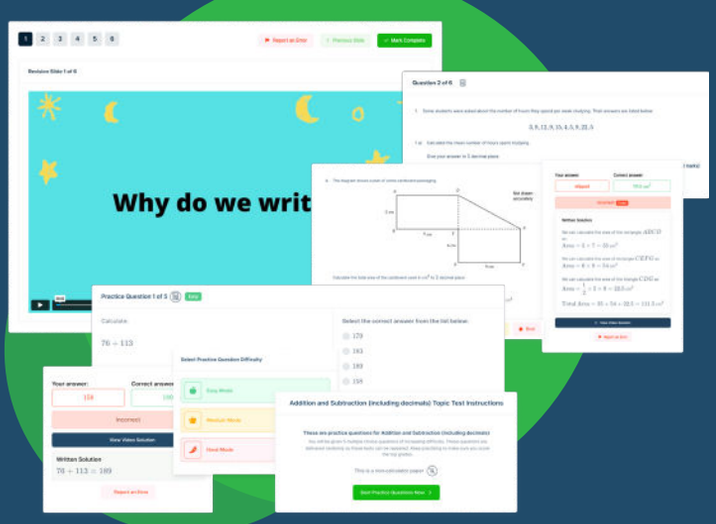
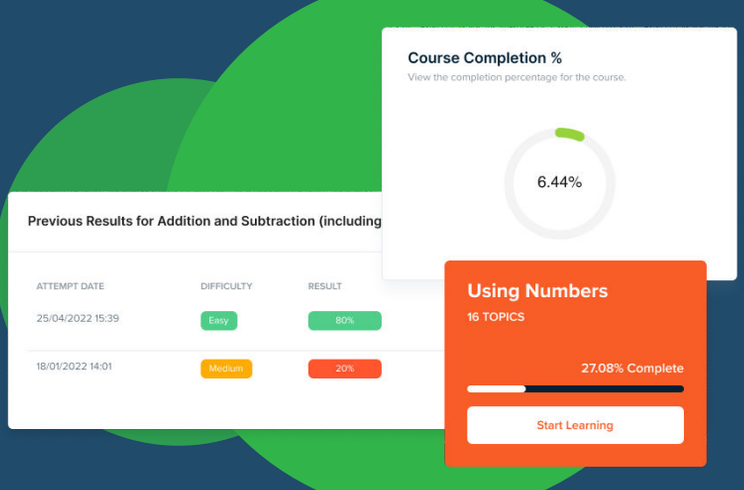
FUNCTIONAL SKILLS ONLINE COURSES



- Your answers are analysed to determine your Current Level
- Suggested courses for you to enrol on based on your calculated level
- Always know the level you are currently working at
- Determine when you are ready to sit your exam

- Explainer videos on every topic
- Quick-fire style mutiple choice questions
- Test your knowledge with exam-style questions
- Written solutions for all questions





- See your progress through as you progress through each topic area
- Get your average scores for practice questions, topic tests and mock exams
- View all practice question, topic test and mock exam attempts over time
- View historical attempts to analyse your progress over time

Or visit
passfunctionalskills.co.uk

SECTION A: Entertainment park

Answer all questions in this section.

Write your answers in the spaces provided.

1 Vinnie works at an entertainment park.

He earns £8.75 an hour.

Last week Vinnie worked for 5 days from 10 am to 6 pm.

Vinnie had one hour lunch break each day.
The hour lunch break is included in the times shown above.
Vinnie does not get paid for his lunch break.

(a) How much did Vinnie earn last week?

£306.25

(3)

Use the box below to show clearly how you get your answer.

[redacted] 10am-6pm:

8hrs

8hr - 1hr break = 7hrs worked per day.

7 × 5 × £8.75 =

Vinnie collected this information from visitors to the park

- gender (male, female)
- age (under 18, 18 – 30, over 30)
- time spent in the park (less than 2 hours, 2 – 4 hours, more than 4 hours).

Vinnie has to show this information in a data summary sheet for his manager.

(b) Design a data summary sheet for Vinnie.

(3)

Use the box below to show your data summary sheet.

	Male			Female.		
	<18	18-30	>30	<18	18-30	>30
< 2 hrs						
2-4hrs						
>4hrs						

Vinnie has to give his manager information about the number of visitors to the park.

The table below shows the number of visitors to the park each day last week.

Mon	Tue	Wed	Thu	Fri	Sat	Sun
4215	4726	4321	4952	5021	5158	4924

(c) What is the mean number of visitors to the park per day last week?
Give your answer to the nearest whole number. (2)

Use the box below to show clearly how you get your answer.

$\frac{4215 + 4726 + \ldots + 5158 + 4924}{7} = 4759.57$

$\rightarrow 4760$

(Total for Question 1 is 8 marks)

2 Vinnie updates the website for the park.
He has to estimate the area a new ride will need.

The diagram shows the rectangular space the ride needs.

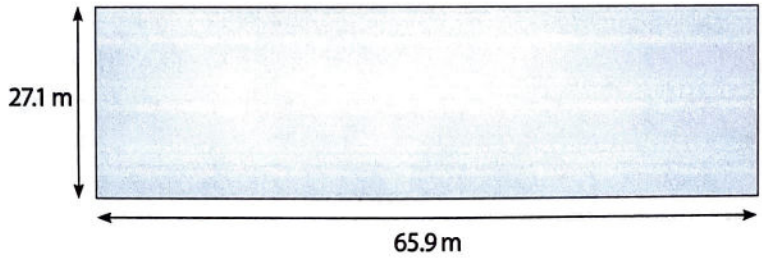


Diagram **not** accurately drawn

(a) Estimate the area of the space the ride needs. (2)

Use the box below to show clearly how you get your answer.

$27 \times 66 = 1782 m^2$.

(b) Explain if your estimation is an underestimation or an overestimation.
You must give a reason for your answer. (1)

Use the box below to write your answer.

Could be either, both values were rounded.

(Total for Question 2 is 3 marks)

3 There is a special offer for tickets to the entertainment park.

	Adult (ages 18 and over)	Junior (ages 12 – 17)	Child (ages 4 – 11)
1-day ticket	£55	£42	£26
2-day ticket	£90	£70	£45
3-day ticket	£130	£95	£62

Buy your tickets in January and get 37% off the total price.

In the Smith family there are 2 adults, 2 juniors and 1 child.
They want to buy a 3-day ticket for everyone in the family.
They buy the tickets in January.

The Smiths also want to book a family room at a hotel for 2 nights.
The family room costs £143.97 per night.

What is the total cost of the tickets and the family room for the Smiths?

(5)

Use the box below to show clearly how you get your answer.

£130 + £130 + £95 + £95 + £62
= £512

£512 × (1 − 0.37) = £322.56

£322.56 + (2 × £143.97) = £610.50

(Total for Question 3 is 5 marks)

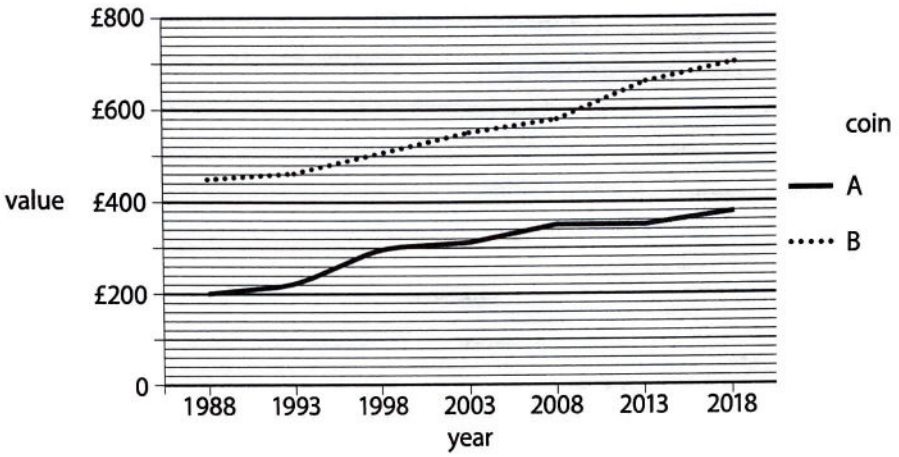
SECTION B: Collecting coins

Answer all questions in this section.

Write your answers in the spaces provided.

4 Tina collects rare coins.

This graph shows the value, over time, of two coins that Tina likes.



Tina wants to buy the coin with the highest percentage increase in value from 1988 to 2018

She uses this formula to find the percentage increase in the value of coin A.

$$V = \frac{H - L}{L} \times 100$$

V is the percentage increase in value
H is the most recent value (£)
L is the value in 1988 (£)

Tina knows that coin B increased in value by 55.5%

(a) Which coin has the highest percentage increase in value?

(4)

Use the box below to show clearly how you get your answer.

Coin A: 2018 - £380.

1988 - £200

→ $\frac{380-200}{200} \times 100 = 90\%$.

Coin A does.

Tina wants to buy a different coin.
The price of the coin is £850

There are two payment options.

option A	option B
pay $\frac{1}{5}$ of the price as a deposit and then 12 instalments of £65.49	pay nothing for a year then pay full price and 13% interest

Tina wants to use the cheapest option.

(b) Which option should Tina use?
Show why you think this. (5)

Use the box below to show clearly how you get your answer.

Option A: $\frac{£850}{5}$ = £170 deposit.

£65.49 × 12 = £785.88

£170 + £785.88 = £955.88 total.

Option B: £850 × 1.13 = £960.50

Option A is Tina's best option.

(Total for Question 4 is 9 marks)

5 Tina wants to design a closing silver box for her coin.

She wants the box to be in the shape of a cuboid with

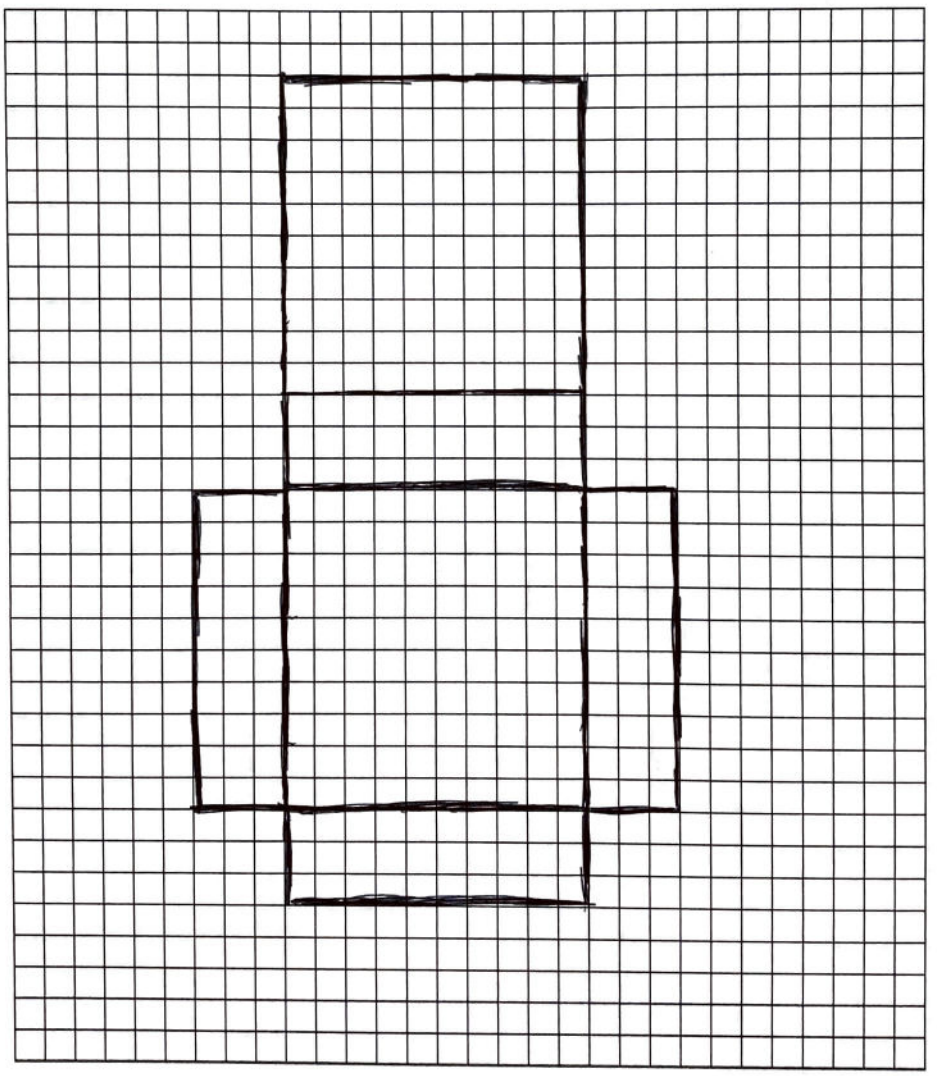
- square base of side length 5 cm
- height of 1.5 cm.

Tina needs to draw an accurate net of the box for a jeweller.

Draw an accurate net of the box for Tina.

(3)

Use the grid below to draw the net.



(Total for Question 5 is 3 marks)

6 Tina wants to join a coin collectors club.

The table shows the club membership options

Membership type	1 month	3 months	6 months	12 months
Silver	$19	$55	$102	$199
Gold	$39	$109	$199	$359
Platinum	$59	$149	$279	$499

Tina wants to buy Gold membership for 6 months.

She knows £1 = $1.286

Tina thinks this membership will cost less than £150

Is Tina correct?
Show why you think this.
Show a check of your working (4)

Use the box below to show clearly how you get your answer.

$\frac{\$199}{1.286} = £154.74.$

No, she is not correct.

Use the box below to show your check.

☑

£154.74 × 1.286 = $199.

(Total for Question 6 is 4 marks)

SECTION C: Meeting venue

Answer all questions in this section.

Write your answers in the spaces provided.

7 Cora is the manager at a meeting venue.
She organises a conference for a local business.

She has these notes.

Conference lasts 2 days

87 people attend each day

Things needed

• 3 large rooms each day	£459 per room per day
• catering	£35 per person per day
• IT support	£94.99 per conference

Cora thinks the total price for the conference will be less than £9000

(a) Is Cora correct?
Show why you think this. (4)

Use the box below to show clearly how you get your answer.

£459 × 2 ×3 = £2754.

£35 × 87 × 2 = £6090.

£2754 + £6090 + £94.99

= £8938.99,

Yes, she is correct.

Cora also organises a fashion show at the venue.
She must work out if the room is big enough for the fashion show.

This is a diagram of the floor in the room.

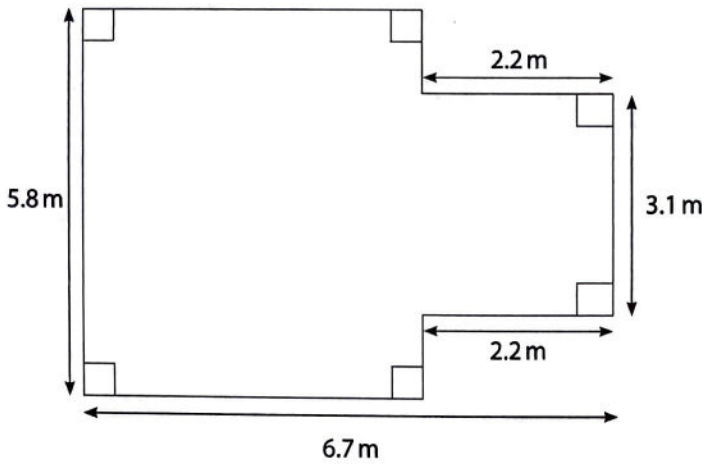


Diagram **not** accurately drawn

Cora allows 1m² of floor space for 2 people.

She thinks there is enough floor space in the room for 60 people.

(b) Is Cora correct?
Show why you think this. (5)

Use the box below to show clearly how you get your answer.

$5.8 \times (6.7 - 2.2) = 26.1 m^2$

$2.2 \times 3.1 = 6.82 m^2$

$26.1 + 6.82 = 32.92 m^2$.

$32.92 \times 2 = 65.84 \rightarrow 65$ people max.

Yes, she is correct.

(Total for Question 7 is 9 marks)

8 Cora asked 720 people for their opinion of the catering at the venue.
Her results are shown in the table below.

opinion	excellent	good	poor
number of people	380	300	40

She wants to show this information in a pie chart for a report.

Cora starts to draw the pie chart.
She draws the largest sector.

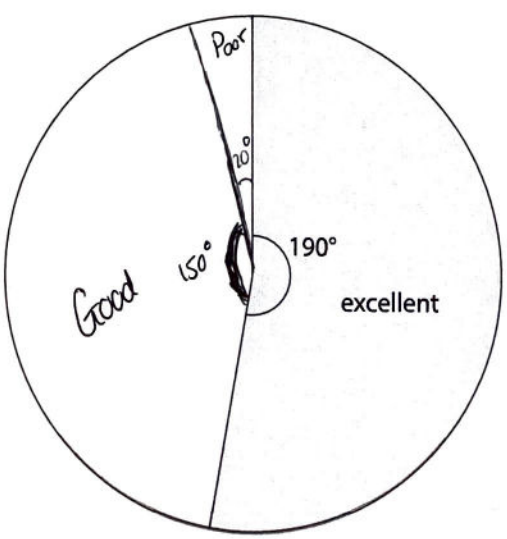
Complete the pie chart below for Cora.

(3)

Use the box below to show clearly how you get your answer.

G: $\frac{300}{720} \times 360^\circ = 150^\circ$.

P: $\frac{40}{720} \times 360^\circ = 20^\circ$.



(Total for Question 8 is 3 marks)

9 Cora organises a wedding reception at the venue.
There will be 178 guests at the reception.

Cora knows that the ratio of waiters to guests should be 2 : 45

She thinks that she will need 8 waiters for the wedding reception.

Will 8 waiters be enough for 178 guests?
Show a check of your working. (4)

Use the box below to show clearly how you get your answer.

$\frac{178}{45} \times 2 = 7.9\dot{1}$

$\Rightarrow$ 8 waiters needed

Yes, 8 waiters is enough.

Use the box below to show your check.

☑

2 : 45
×2 ↓ ×2
4 : 90
×2 ↓ ×2
8 : 180.

$\frac{8 \times 45}{2} = 180 > 178.$

(Total for Question 9 is 4 marks)

(TOTAL FOR PAPER IS 48 MARKS)

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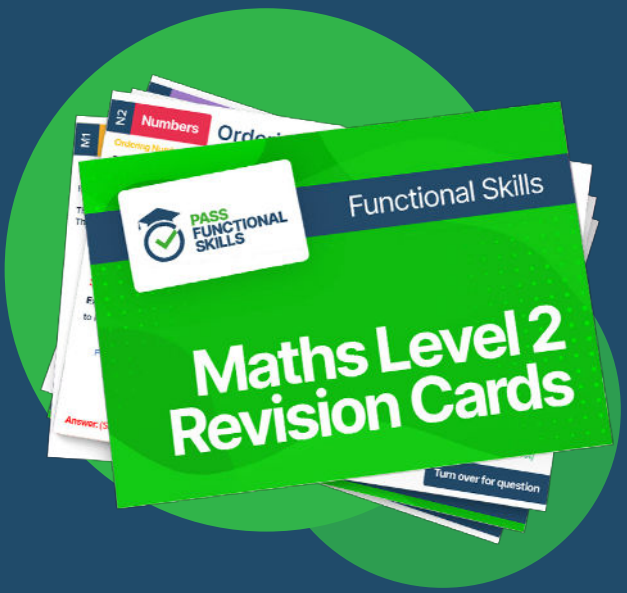

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