ncfe.

NCFE Level 1 Functional Skills Qualification in Mathematics (603/5055/6)

Paper number:	SAM
Section B:	Calculator Test

Time allowed: 1 hour 30 minutes

Learner instructions

- Answer **all** questions.
- Read each question carefully.
- Write your answers in the spaces provided.
- Show your working, as marks may be awarded for working.
- State units in your answers, where appropriate.
- Check your work.

Learner information

- Section B contains **Activities 2, 3** and **4**.
- The maximum mark for this section is **45**.
- The marks available for **each** question are shown in brackets.

Resources

You will need a:

- pen, with black or blue ink
- pencil and eraser
- 30 cm ruler
- protractor
- calculator.

If extra pages are used, please make sure your name and centre name are on them and they are securely fastened to this booklet.

Please complete the details below clearly and in BLOCK CAPITALS.

Learner name _____

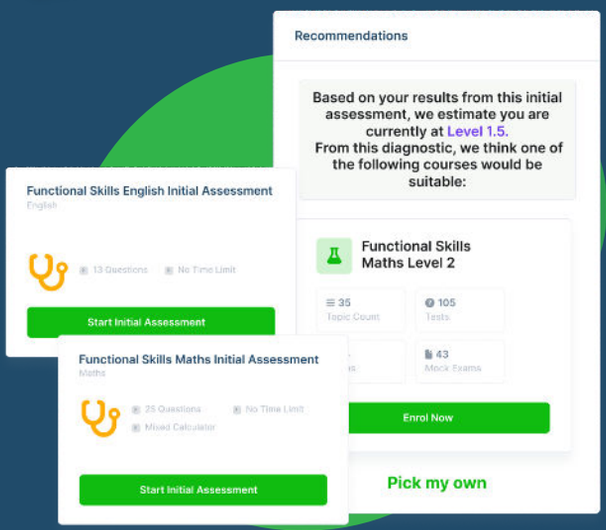
Centre name _____

Learner number | | Centre number | |

Do not turn over until the invigilator tells you to do so.

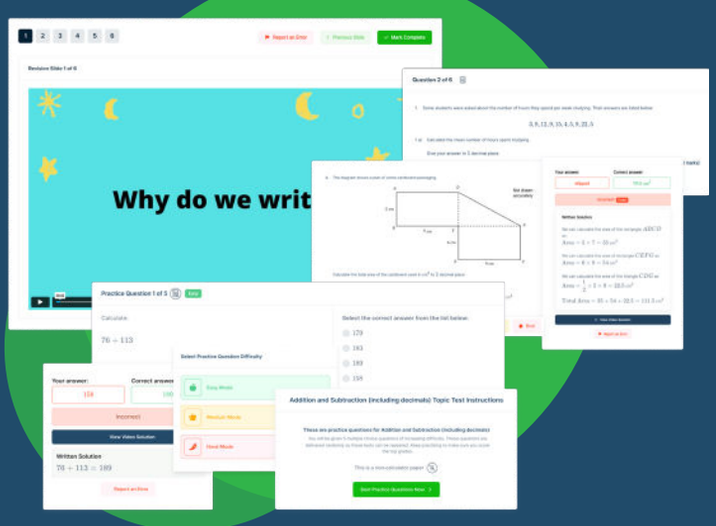
PASS FUNCTIONAL SKILLS

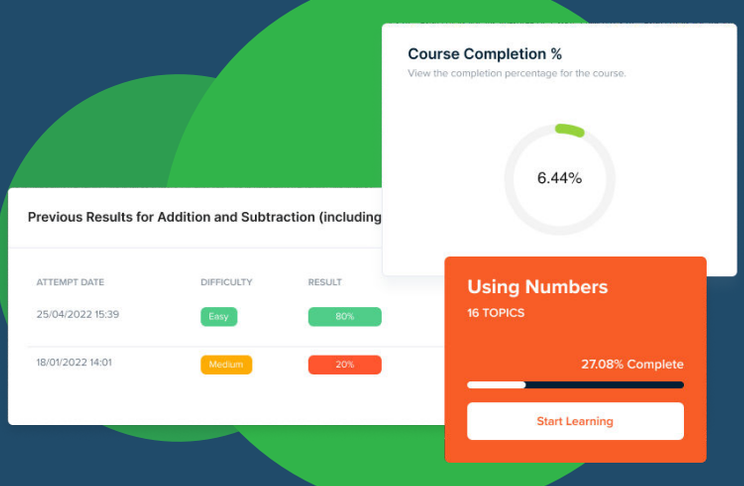
FUNCTIONAL SKILLS ONLINE COURSES



- 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

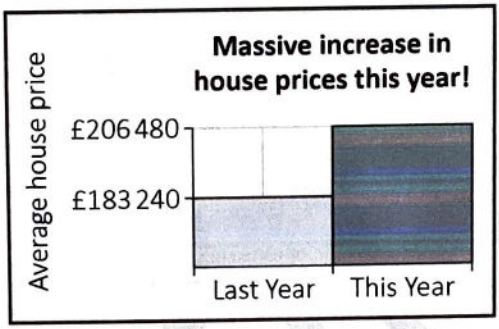
Or visit
passfunctionalskills.co.uk

Activity 2: House and garden

2 (a) Nadia is buying a new house.

She reads an article about house prices in her area.

The article contains this graph:



Nadia says,
"The average house price has doubled since last year!"

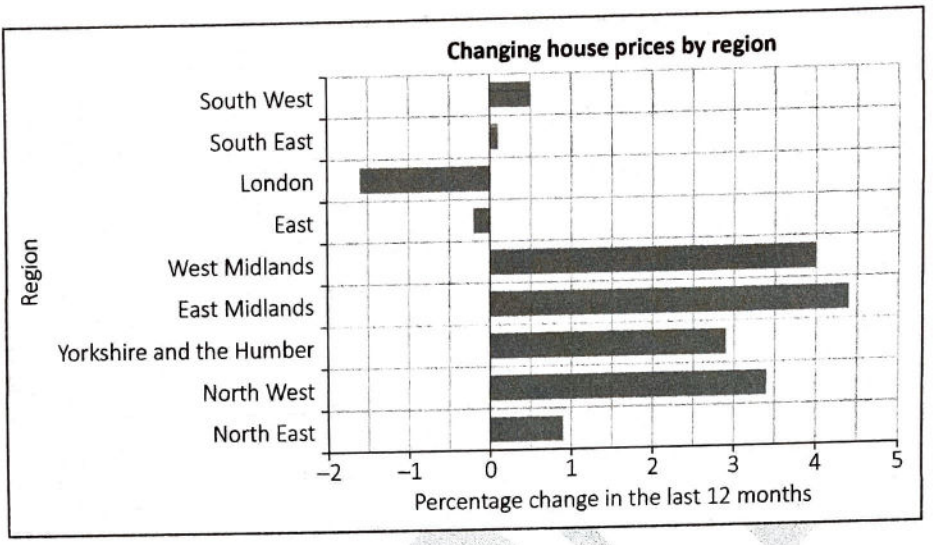
Is she correct? **Explain your answer.**

[1 mark]

No, it has only gone up £23240.

Please turn over

2 (b) The article also contains this graph:



Nadia says,
"The graph shows that London has the lowest house prices!"

Is Nadia correct? **Explain your answer.**

[1 mark]

No, the graph only shows the change.

2 (c) In Nadia's region, house prices rose by $\frac{1}{25}$ in the last 12 months.

Which region does Nadia live in?

[1 mark]

$\frac{1}{25} = 4\%$

West Midlands increased by 4%

Your answer: West Midlands

2 (d) Nadia borrows £6255 for one year to pay for improvements to her new house.

The rate of interest is 5% per year.

How much interest will Nadia pay on this loan?

[2 marks]

5% = 0.05

1.05 for increase

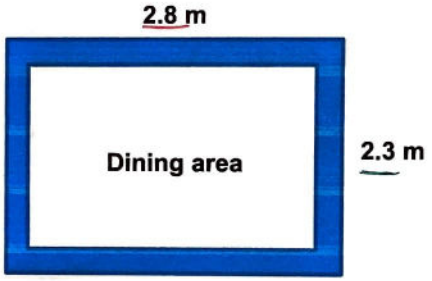
£6255 × 0.05 = £312.75

Your answer: £ 312.75

2 (e) Nadia decides that she will tile the floor of the dining area.

She wants to put one row of blue tiles around the edge of the dining area.
The rest of the tiles will be white.

This is a plan of the dining area:



Not drawn accurately

The tiles all measure 0.3 m by 0.3 m

What will be the perimeter of the block of white tiles?

[2 marks]

$2.8 - 0.3 - 0.3 = 2.2$
$2.3 - 0.3 - 0.3 = 1.7$

$2.2 + 1.7 = 3.9$

$3.9 \times 2 = 7.8$

Your answer: 7.8 m

2 (f) Nadia wants to draw a scale diagram of the garden.

The garden is rectangular and measures 1350 cm by 1000 cm

Nadia says,
"If I use a scale of 1 cm to 50 cm, the drawing will fit on a piece of A4 paper".

A4 paper measures 297 mm by 210 mm

Is Nadia correct? **Explain how you decide.**

[3 marks]

$1350 \div 50 = 27\text{cm} = 270\text{mm} < 297\text{mm}$
$1000 \div 50 = 20\text{cm} = 200\text{mm} < 210\text{mm}$
Nadia is correct.

Please turn over

2 (g) Nadia wants to buy some grass seed for her garden.

She compares two different brands.

Good to Grow	**GRASS IT**
• Ratio of rye grass to other is 4:1	• 75% rye grass
• 45 g covers 1 m^2	• 45 g covers 1 m^2
• 1 kg box £3.95	• 1 kg box £3.95

The better quality grass seed is the one with the **highest** proportion of rye grass.

Which brand sells the better quality grass seed?
Show your working.

[2 marks]

Good to grow 4:1

$\frac{4}{5}$ and $\frac{1}{5}$

$\frac{4}{5} = 80\% > 75\%$

Good to grow

Your answer: Good to grow

2 (h) 'Good to Grow' and 'Grass It' cost the same.

How much will it cost Nadia to buy grass seed to cover an area of 60 m^2?

[3 marks]

$45 \times 60 = 2700g$

$= 2.7kg$.

Need 3 boxes.

$3 \times £3.95 = £11.85$

Your answer: £ 11.85

[Total marks: 15]

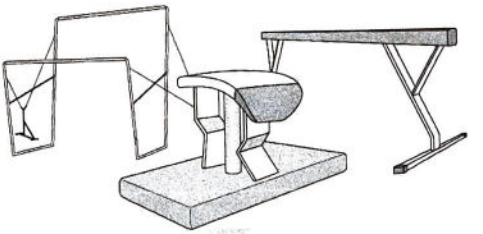
Please turn over

Activity 3: Gymnastics competition

In a local gymnastics competition, each person takes part in four events:

- Floor
- A-Bars
- Beam
- Vault

Points are scored for each event.



Here is some information about the points scored so far in the competition.

There are still three people who need to compete on Vault.

	Points scored for				
Name	**Floor**	**A-Bars**	**Beam**	**Vault**	**Total points scored**
Alex	13.20	9.80	12.05	11.65	46.70
Chris	12.70	9.95	11.45	11.45	45.55
Sam	12.75	9.90	11.45	11.35	45.45
Charlie	13.70	9.15	9.25	12.45	44.55
Jaspreet	12.80	9.10	11.10	10.60	43.60
Jordan	13.10	9.30	10.25	10.90	43.55
Kim	12.70	8.30	10.30	11.40	42.70
Pat	11.55	9.90	12.50		
Misha	12.75	7.35	11.10		
Kay	12.20	8.45	9.95		

3 (a) How many more points did Jaspreet score than Jordan for the Beam?

[1 mark]

$11.10 - 10.25 = 0.85$

Your answer: 0.85

3 (b) Calculate the range of points scored for the A-Bars.

[2 marks]

$9.95 - 7.35 = 2.6$

Your answer: 2.6

Please turn over

3 (c) The total points scored by all gymnasts so far for the Vault is 79.80

Calculate the mean points scored for the Vault so far.

[2 marks]

$79.80 \div 7 = 11.4$

Your answer: 11.4

3 (d) Pat says,
"I need 12.75 points on the vault to score the same total points as Alex".

Is Pat correct? **Show your working.**

[2 marks]

Alex = 46.70

Pat = $11.55 + 9.90 + 12.50 = 33.95$

$46.70 - 33.95 = 12.75$

Your answer: 12.75

3 (e) The winner is the person who scores the highest total points at the end.

If two competitors score the same total points, the winner is the person who scores higher in the most events.

Here are the final scores.

Name	Total points scored
Alex	46.70
Chris	45.55
Sam	45.45
Charlie	44.55
Jaspreet	43.60
Jordan	43.55
Kim	42.70
Pat	46.70
Misha	43.65
Kay	41.20

Who won the competition? **Explain how you decide.**

[2 marks]

Pat and Alex both have 46.70.
Pat must have scored 12.75 in Vault.
Pat beat Alex in 3 events and lost to Alex in 1 event.
So Pat wins.

3 (f) The people who are awarded 1st, 2nd and 3rd places win trophies.

The weights of the 1st and 3rd trophies are in the ratio 3 : 1

The weights of the 2nd and 3rd trophies are in the ratio 2 : 1

The weight of the 1st trophy is 354 g

What is the weight of the 2nd trophy?

[3 marks]

3 : 1 = 354 : 118

1 : 2 = 118 : 236

236g

Your answer: 236 **g**

3 (g) Each trophy is made of a metal cup on a wooden base.

The base of the 2nd place trophy:

- is a cuboid with a volume 202.8 cm^3
- has a length of 6.5 cm and a width of 6.5 cm

Work out the height of the 2nd place trophy base.

[3 marks]

$6.5 \times 6.5 \times \text{height} = 202.8$

$202.8 \div 6.5 \div 6.5 = 4.8$

Your answer: 4.8 **cm**

[Total marks: 15]

Please turn over

Activity 4: Bears

4 (a) Raj works in a factory that makes teddy bears.

It makes large bears and small bears.

Raj's job is to check that the bears are not faulty.

He records the number of faults he finds each day for 20 days.

9	**11**	**3**	**13**	**8**	**0**	**5**	**12**	**17**	**24**
20	**7**	**22**	**5**	**23**	**6**	**15**	**5**	**25**	**6**

Use Raj's data to complete this table.

[2 marks]

Number of faults	Number of days
0 to 10	10
11 to 20	6
21 to 30	4

4 (b) The factory makes two hundred and forty thousand bears a year.

$\frac{3}{5}$ of these are small bears.

How many small bears does the factory make each year?

[3 marks]

$240\,000 \times \frac{3}{5} = 144\,000$

Your answer: 144 000

Please turn over

4 (c) Raj has this data about the type of faults he found last year.

	Type of fault			
	Material	**Seams**	**Labels**	**Other**
Frequency	72	54	45	9

He is asked to present the data to his manager.

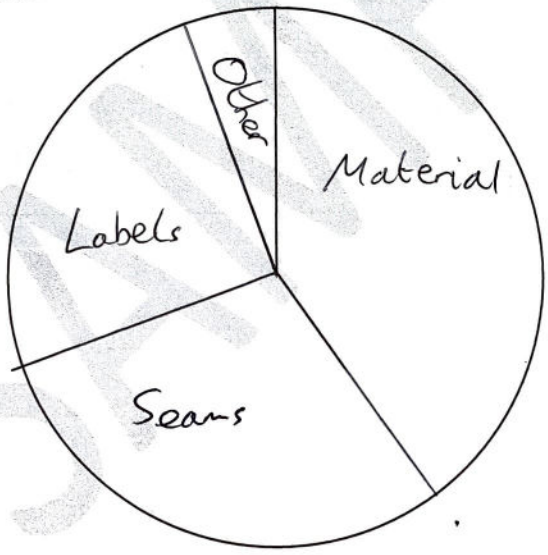
Raj decides to draw a pie chart.

Draw a pie chart to represent Raj's data.

[5 marks]

$72+54+45+9=180$ So $\times 2$

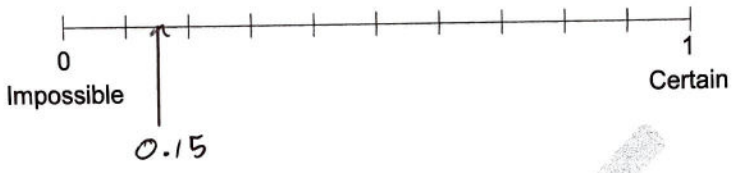
Material $=144°$
Seams $=108°$
Labels $=90°$
Other $=18°$



4 (d) Raj finds that, in a sample of 20 faulty bears, three have more than one fault.

He picks a bear from the sample at random to show his manager.

On this probability scale, mark the probability that the bear has more than one fault.



[3 marks]

4 (e) The probability that a faulty bear chosen at random has lost its label is $\frac{1}{7}$

What is the probability that the bear has **not** lost its label?
Give your answer as a decimal to **2 decimal places.**

[2 marks]

$1 - \frac{1}{7} = \frac{7}{7} - \frac{1}{7} = \frac{6}{7} = 0.857...$

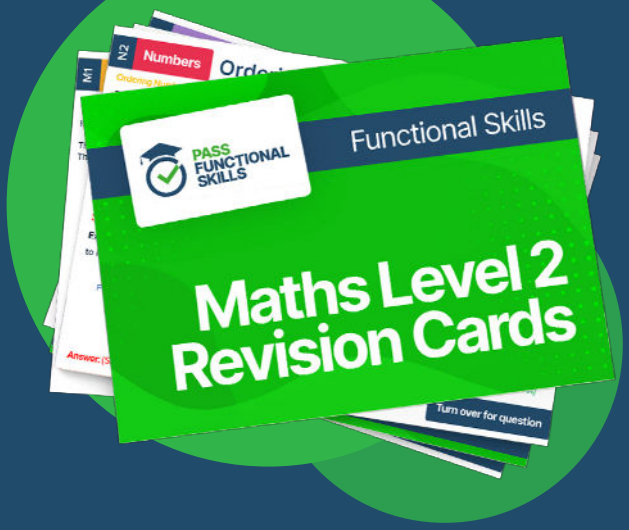
Your answer: 0.86

[Total marks: 15]

This is the end of the assessment.

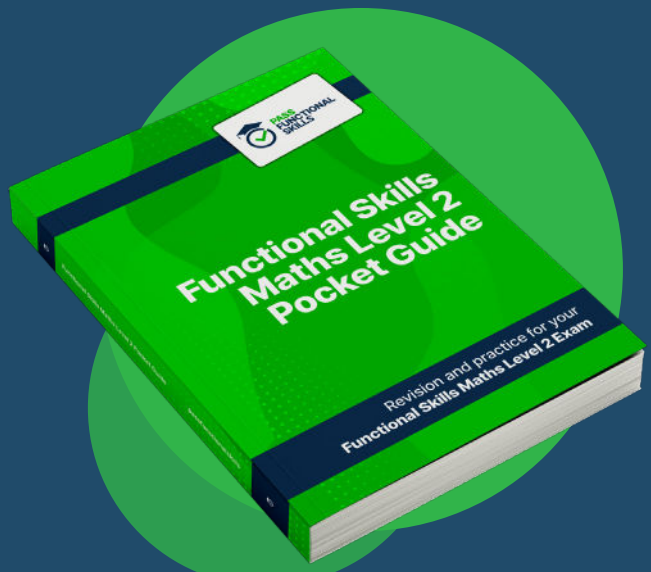
PASS FUNCTIONAL SKILLS

Functional Skills Maths
Level 2 Practice Papers



Functional Skills Maths
Level 2 Revision Cards

Functional Skills English Level 2
Practice Papers & Revision Cards



Functional Skills Maths
Level 2 Pocket Revision Guide

Or visit
passfunctionalskills.co.uk