# **TQUK Functional Skills Qualification in Maths at Level 2**

## **Examination Past Paper 5**

Please complete tl CAPITALS.	ne details below using black or blue ink. Use BLOCK
Learner Name:	
Learner Number:	
Date:	
Centre Name:	

Training QualificationsUK

#### Instructions:

- read each question carefully
- answer **all** questions
- write your answers **clearly** in the spaces provided
- **check** your answers.

#### Information:

- this examination has two sections. These are clearly labelled
- you are **not allowed** to use a calculator for Section A
- you are allowed to use a calculator for Section B
- the maximum mark for this examination is 60
- the marks available for each question are shown in **bold** beneath each question.

#### Items:

- you will need a pen with black or blue ink, a pencil, a ruler and an eraser (for diagrams, graphs and charts only)
- you will need a basic calculator for Section B only
- you **will need** a protractor
- you will not need any other stationery or equipment.

#### Time allowed:

**30 minutes** for Section A (Non-calculator) **90 minutes** for Section B (Calculator)

#### Do not open this examination paper until you are told to do so.

	Marks available	Marks awarded	Second marks
Section A	15		
Section B	45		
Total marks	60		

#### For examiner use only

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1

3. Work out:

$$8\frac{1}{4}+2\frac{1}{5}$$

Give your answer as a mixed number.



[2]

5. Dale is an estate agent and sells two properties. These are the sale prices: House A: £825 750 House B: £390 595 Dale thinks that the total sale price for both properties is more than £1 215 000 Is Dale correct? Show how you decide. 5 O 9 2 5 90 595 3 16345 E1216349 2 Ves, £1216345 Answer [2]

- 6. A concrete block has:
  - mass = 4800 grams
  - volume = 2000 cm<sup>3</sup>

Work out the density of the concrete block.



**7.** The distance between Taylor's house and Kai's house on a map is 8 centimetres (cm).

The scale on the map is 1 : 50 000

Work out the actual distance between the two houses.

Give your answer in kilometres (km).



[2]

8. Lei asks a group of people whether they own a car or a van.

The results are shown in this Venn diagram:



One of these people is chosen at random.

What is the probability that the person chosen does not own a car or a van?

Give your answer as a decimal **and** a percentage.

10 people do	10 people don't own a car or van											
Total people	Total people = $140 + 20 + 30 + 10$											
$\frac{10}{200} = \frac{1}{200}$	= 200	5 = 5%										
	Answer	a) Decimal: 0 . 0 5	b) Percentage: 5%									

[3]

End of Section A.

Section B begins on Page 7.

## Section B: Calculator

There are **45 marks** available in this section. You **can** use a basic calculator in this section. You will have **90 minutes** to complete this section.

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	R

1. What type of correlation does the scatter graph show?



Heights and ages of people

[1]

1000	2000	1200	1500	1200	1400	1375
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**3.** Riley wants to put a square vegetable patch in a garden.

One side of the vegetable patch is shown on the grid below:



Write down possible coordinates for the other two corners of the square.

(-⁊, ɟ) and (-ʉ , ᄀ+) ◯ℝ Answer (-1,-2) and (2,1) [2]

4. Draw the plan view and side view of the shape:



					F	Plai	n vi	iew	1											S	ide	e vie	ew						
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- 5. Write:
  - $\frac{1}{16}$
  - a) as a decimal
  - b) as a percentage.



[2]

6. Jessie reads reviews for a film online.

210 of the reviewers would recommend the film.

30 of the reviewers would not recommend the film.

What percentage of the total number of reviewers would recommend the film?



Sam needs to put a fence around the garden shown below: 7. 5.5 m 3.3 m Not drawn to scale 4 m 2 m 8.125 m Fence panels are 2.6 metres wide. The fence panels can be cut to size after Sam buys them. How many fence panels does Sam need to buy? perimeter = 5.5 + 3.3 + 2 + 8.125+ 4 = 22.925 m22.925 - 2.6= 8.817. need 9 fence panels 9 Answer panels

[3]

8. Stevie needs to estimate the surface area of a sphere.

Stevie knows:

- the radius of the sphere is 8 cm
- $\pi = 3.14159$

Stevie rounds  $\pi$  to the nearest whole number to **estimate** the surface area of the sphere.

What answer should Stevie get?

Use:

$$A=4\pi r^2$$

Where: A = surface area of sphere r = radius of sphere

### Show your working.



[3]

**9.** Parker wants to fill the path around a fishpond with grey and white pebbles to a depth of 0.06 metres (m).



Parker uses this formula to estimate the total amount of pebbles needed:

(Area of larger rectangle – area of smaller rectangle) multiplied by depth of pebbles

Parker reduces the total amount by 38% to estimate the amount of white pebbles required.

What answer should Parker get?

Area of small rectangle =  $2 \times 5 = 10 \text{ m}^2$ Area of large rectangle =  $7 \times 3 = 21 \text{ m}^2$ Total amount of pebbles = (21-10) × 0.06 = 0.66 m<sup>3</sup> of peobles - 0.38 = 0.62  $0.66 \times 0.62 = 0.4092 \text{ m}^3$ 0.4092m<sup>3</sup> Answer [3]

14

**10.** Hayden cycles 15 miles in 50 minutes.

Hayden thinks it is more than 17 miles per hour (mph).

35

Is Hayden correct?

## Show how you decide.

Speed = distance time	$50 \text{ mins} = \frac{5}{6} \text{ or } 0.8333$
= 15	
= 18 mph	
	Answer Ves, 18 mph

[3]

**11.** Kass is planning a road trip.

The total distance is 4000 kilometres (km).

Kass only wants to drive a maximum of 180 miles each day.

How many whole days will Kass need to complete the 4000 km?

Use this graph to convert between kilometres and miles.



**Conversion Graph** 

**12.** Jude needs to order 200 sandwiches for a party.

Jude has these instructions:

• order cheese, ham and chicken sandwiches in the ratio 5 : 2 : 1

Complete the shopping list for Jude.

Shopping list									
Type of sandwich	Number of sandwiches to order								
Cheese	125								
Ham	50								
Chicken	25								
Total	200								



[4]

**13.** Nia and Charlie are both taxi drivers.

The table shows how far each drove last week:

	Monday	Tuesday	Wednesday	Thursday	Friday
Nio	140	86	138	110	96
INIA	miles	miles	miles	miles	miles
Charlie	76	120	124	60	130
Charne	miles	miles	miles	miles	miles

Their manager thinks that, on average, Nia drove further each day than Charlie.

Charlie disagrees.

Show that **both** could be correct.

## Show your working.



**14.** Harper works at an aquarium.

Harper needs to fill this cylindrical fish tank until it is 72% full.



Harper knows that the tank will hold 981 250 cubic centimetres (cm<sup>3</sup>) of water when it is full.

To what height does Harper need to fill the tank?

*Use*  $\pi = 3.14$ 

$981250 \times 0.72 = 706500 \text{ cm}^3 (72% \text{ full})$
$V = \pi r^2 h = 706500$
$3.14 \times 50 \times 50 \times h = 706500$
$h = \frac{706500}{500}$
$3.14 \times 50 \times 50$ = 90 cm
Answer 90 cm
[5]

**15.** Dylan wants to estimate how much it will cost to carpet a section of floor.

The section of floor is made up of a rectangle with a semi-circle on each end.



Not drawn to scale

Dylan finds these carpets for sale:

Carpet	А	В	С	D	E
Price per square metre (m <sup>2</sup> )	£22.50	£15.75	£18.00	£24.95	£15.75

Dylan uses the modal price to estimate how much the total cost will be.

How much does Dylan estimate it will cost to carpet the section of floor?

Give your answer to the nearest pound  $(\mathfrak{L})$ .

*Use*  $\pi = 3.14$ 

Answer box is on the following page

2 semi orde = 
$$1 \operatorname{circle} = \operatorname{TT} r^2$$
  
 $= 3.14 \times 1.5 \times 1.5$   
 $= 7.065 \text{ m}^2$   
rectangular area =  $6.45 \times 3$   
 $= 19.35 \text{ m}^2$   
Total area =  $7.065 \pm 19.35$   
 $= 26.415 \text{ m}^2$   
Modal price most common :  $E15.75$   
Estimation of cost =  $26.415 \times 15.75$   
 $= E416.036...$   
 $= E416$  to the nearest pound  
 $= E416$  to the nearest pound

[6]

This is the end of the assessment.