

FOR OFFICIAL USE



National
Qualifications
2014

Mark

X744/75/01

**Lifeskills Mathematics
Paper 1
(Non-Calculator)**

FRIDAY, 9 MAY

1:00 PM – 1:50 PM



* X 7 4 4 7 5 0 1 *

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Number of seat

Date of birth

Day

Month

Year

Scottish candidate number

Total marks — 35

Attempt ALL questions.

Write your answers in the spaces provided in this booklet. Additional space for answers is provided at the end of this booklet. If you use this space you must clearly identify question number you are attempting.

Use **blue** or **black** ink.

You may NOT use a calculator.

Full credit will be given only to solutions which contain appropriate working.

State the units for your answer where appropriate.

Before leaving the examination room you must give this booklet to the Invigilator; if you do not, you may lose all the marks for this paper.

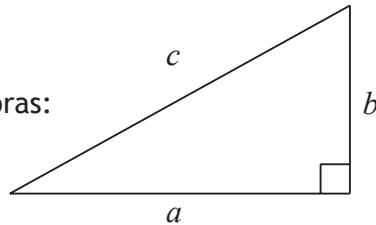


FORMULAE LIST

Circumference of a circle: $C = \pi d$

Area of a circle: $A = \pi r^2$

Theorem of Pythagoras:



$$a^2 + b^2 = c^2$$

Volume of a cylinder: $V = \pi r^2 h$

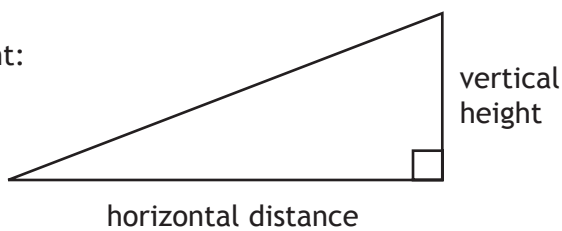
Volume of a prism: $V = Ah$

Volume of a cone: $V = \frac{1}{3} \pi r^2 h$

Volume of a sphere: $V = \frac{4}{3} \pi r^3$

Standard deviation: $s = \sqrt{\frac{\sum(x - \bar{x})^2}{n-1}} = \sqrt{\frac{\sum x^2 - (\sum x)^2/n}{n-1}}$, where n is the sample size.

Gradient:



$$\text{gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$



* X 7 4 4 7 5 0 1 0 2 *

Attempt ALL questions

1. Mrs Abid took a survey in her mathematics class of how pupils travelled to school.

The results are shown in the table.

	Walk	Cycle	Bus
Boys	6	4	3
Girls	2	3	12

What is the probability that a pupil chosen at random is a girl who cycles to school?

Give your answer in its simplest form.

2

[Turn over

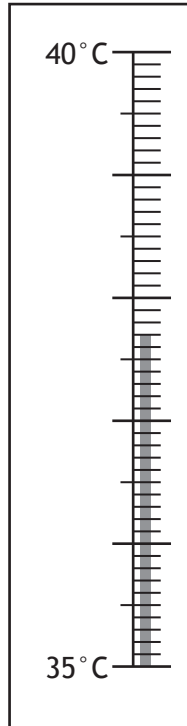


* X 7 4 4 7 5 0 1 0 3 *

MARKS

DO NOT
WRITE IN
THIS
MARGIN

2. Frances is not feeling well.
She takes her temperature using a thermometer.
Her temperature is shown below.
The temperature of a person in good health is $36.8^{\circ}\text{C} \pm 0.4^{\circ}\text{C}$.



Is Frances in good health?

Give a reason for your answer.

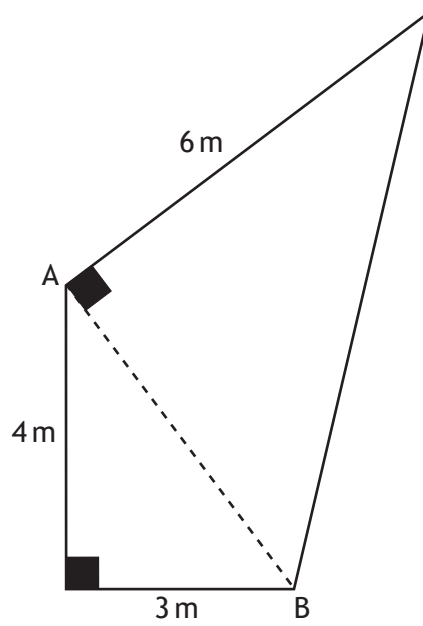
3



MARKS

DO NOT
WRITE IN
THIS
MARGIN

3. A new sail is being designed for a yacht as shown below.
It consists of two right angled triangles.



- (a) Calculate the length of AB. 1
- (b) Calculate the total area of the sail. 2

Total marks 3
[Turn over



MARKS

DO NOT
WRITE IN
THIS
MARGIN

4. Adam works for 40 hours per week as a tractor driver on a farm.
His basic wage is £7·40 per hour.
Each week he pays £28·43 Income Tax and £8·57 in National Insurance.

(a) Calculate his take home pay.

1



4. (continued)

(b) Adam is going on holiday in 13 weeks.

The holiday costs £320 and Adam wants to take £200 spending money.

He makes a table to show his weekly income and outgoings.

He puts the balance into his holiday fund.

	Income	Outgoings
Take home pay		
Rent		£76
Bills		£41
Food		£45
Entertainment		£30
Transport		£23
Holiday Fund		

Will he have enough to cover the cost of the holiday and his spending money?

Justify your answer.

3

Total marks 4

[Turn over



MARKS

DO NOT
WRITE IN
THIS
MARGIN

5. Reece is given a lift to school.
She leaves the house at 8:30 am and arrives at school at 8:50 am.
She uses an app on her phone to calculate her average speed for the journey.
Her phone displays 6.8m/s.
What distance did she travel?
Give your answer to 2 significant figures.

4

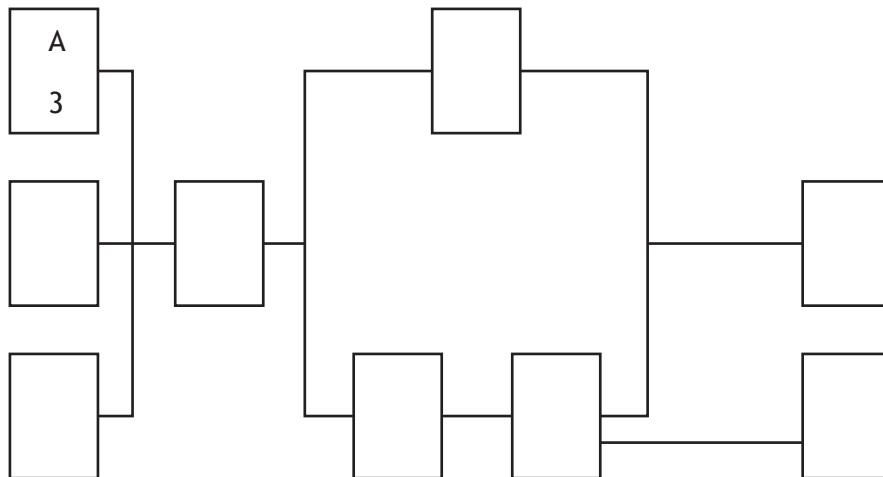


6. The Clarks employ Kitease to install a new kitchen for them. Kitease provide a team of workers to install the kitchen. The table shows the list of tasks and the time required for each.

Task	Detail	Preceding task	Time(hours)
A	Begin electrics	None	3
B	Build cupboards	None	5
C	Begin plumbing	None	2
D	Plaster walls	A,B,C	8
E	Fit wall cupboards	D	6
F	Fit floor cupboards	D	5
G	Fit worktops	F	3
H	Finish plumbing	G	3
I	Finish electrics	E,G	4

- (a) Complete the diagram below by writing these tasks and times in the boxes.

(An additional diagram, if required, can be found on *Page fifteen.*)



2

- (b) Kitease claim they can install this kitchen in 22 hours.

Is this a valid claim?

Give a reason for your answer.

2

Total marks 4

[Turn over



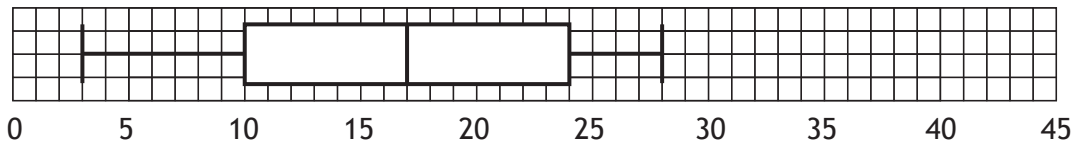
7. This back-to-back stem and leaf diagram represents the number of hours a class spends on social networking websites in a week.

Girls		Boys
	0	3 6 8 9
8 4 3 0	1	1 2 4 7 7 8 9
9 8 7 6 2 2 1	2	2 6 7 8 8
7 2 0	3	
2	4	
n = 15		n = 16

KEY

3 | 1 | represents 13 hours
 2 | 5 | represents 25 hours

(a) A boxplot is drawn to represent one set of data.



Which set of data does this represent?

Give a reason for your answer.

1



MARKS DO NOT WRITE IN THIS MARGIN

7. (continued)

(b) For the other set of data, state:

the median

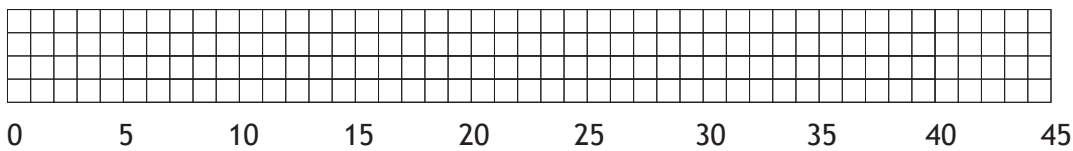
the lower quartile

the upper quartile

2

(c) Construct a box plot for the second set of data.

(An additional diagram, if required, can be found on *Page fifteen.*)



2

Total marks 5

[Turn over



MARKS

DO NOT
WRITE IN
THIS
MARGIN

8. Elaine goes on a 5 day long business trip to Oslo in Norway. She changes £750 to Norwegian kroner for the trip.

Rates of exchange	
Pounds Sterling (£)	Other Currencies
1	NOK 8.00 (Norwegian kroner)
1	€1.20 (euros)

- (a) How many Norwegian kroner will Elaine receive?

1



8. (continued)

(b) Elaine spends NOK 520 each day she is in Norway.

Her company extends her trip by sending her to Munich in Germany for a further 3 days.

If she changes all her remaining kroner to euros, how many euros will she receive?

She spends €135 each day she is in Munich.

How much money does she have left at the end of her trip?

Give your answer in pounds sterling.

5

Total marks 6

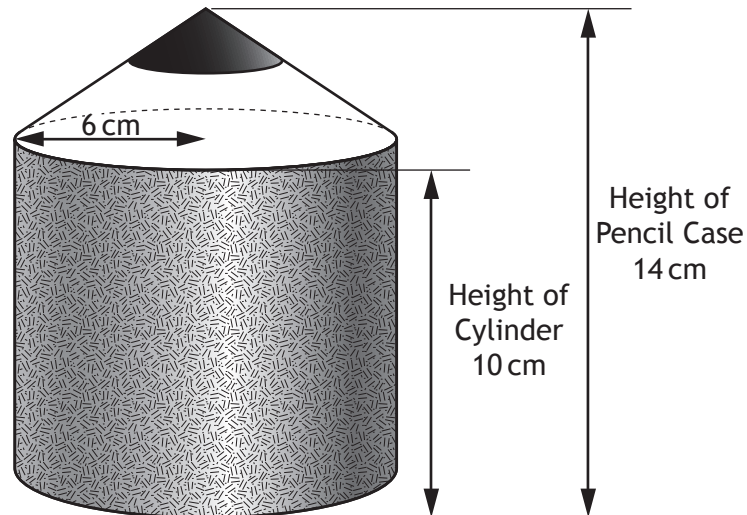
[Turn over for Question 9 on *Page Fourteen*]



MARKS

DO NOT
WRITE IN
THIS
MARGIN

9. Robbie has a tub for his crayons.
It is in the shape of a pencil as shown below.
It consists of a cylinder with a cone on top.



Show that the volume of Robbie's tub is $408 \pi \text{ cm}^3$.

4

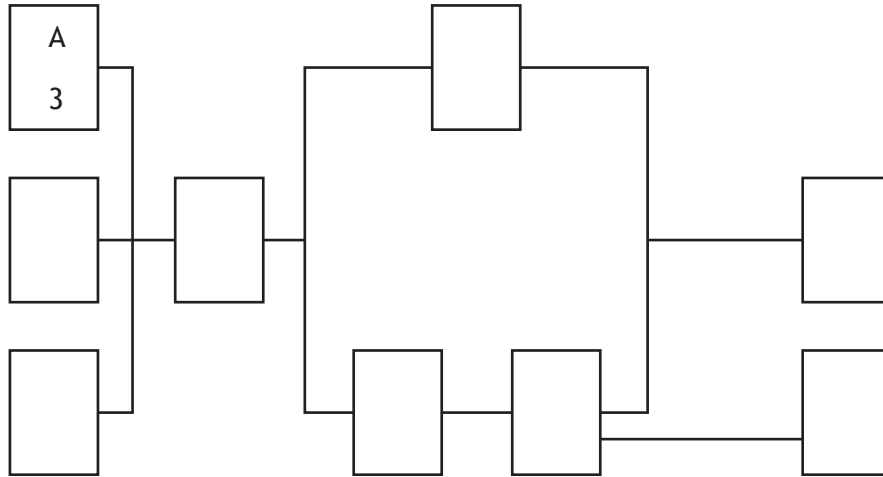
[END OF QUESTION PAPER]



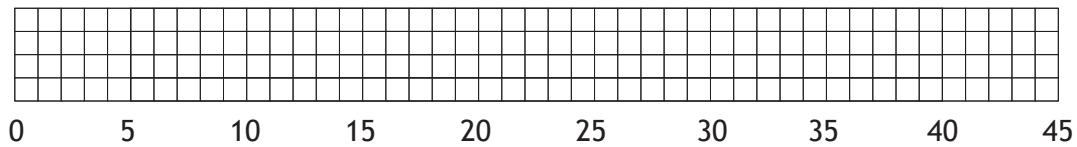
ADDITIONAL SPACE FOR ANSWERS

MARKS
DO NOT
WRITE IN
THIS
MARGIN

Additional diagram for Question 6 (a)



Additional diagram for Question 7 (c)





ADDITIONAL SPACE FOR ANSWERS

MARKS

DO NOT
WRITE IN
THIS
MARGIN

--



* X 7 4 4 7 5 0 1 1 6 *