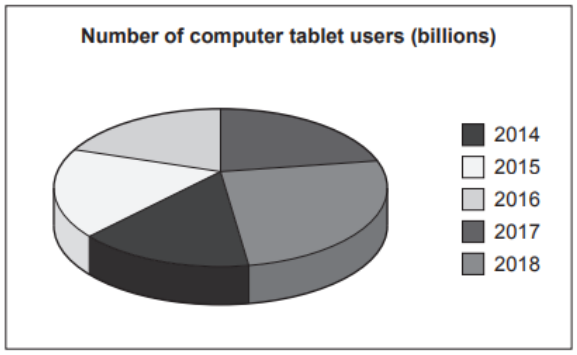
OCR GCSE Mathematics Non-Calculator 2022 Higher Paper 2 Revision Worksheet

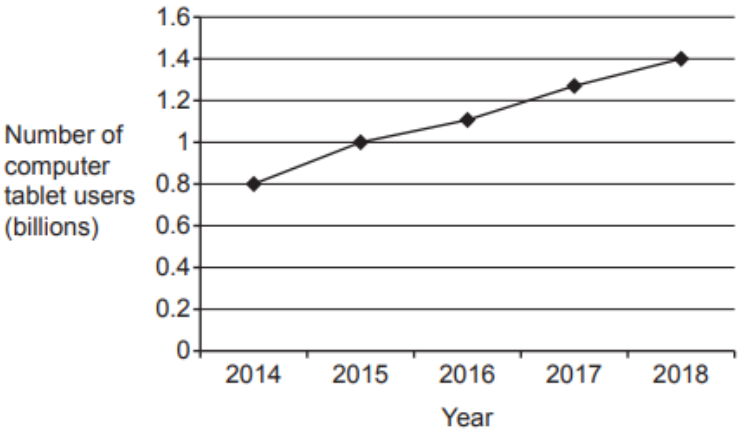
Question 1

(a) Li creates this pie chart to show the estimated number of computer tablet users worldwide from 2014 to 2018.



Write down two reasons why Li's pie chart is not suitable to represent the data.

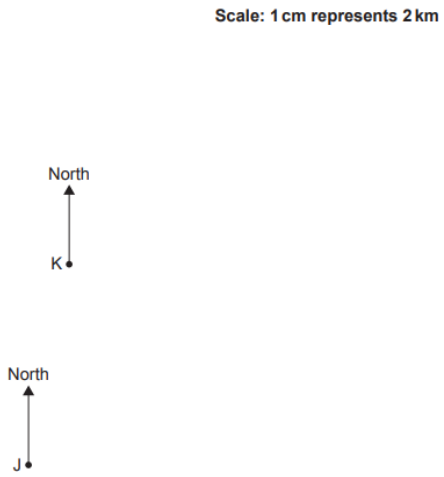
(b) Amaya creates this line graph to show the same data.



Work out the percentage increase in the number of computer tablet users from 2014 to 2018.

Question 2

The scale diagram below shows the position of two castles, J and K.



The bearing of a tower from castle J is 072°.

The bearing of the tower from castle K is 116°.

Use construction to find the distance from castle J to the tower. Give your answer to the nearest 0.1 km.

Question 3

Dinosaurs first appeared on Earth 2.4×10^8 years ago. Dinosaurs became extinct on Earth 7×10^7 years ago.

(a) Explain why it is appropriate to use standard form for these numbers.

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(b) Use the given information to work out how long dinosaurs existed on Earth. Give your answer in standard form.

(b) .....

Question 4

$784 = 2^{\square} \times 7^2$

(a) Complete this statement by writing the missing power in the box.

(b) Use your answer to part (a) to find the value of. $\sqrt{784}$.

Question 5

Recipes measure small quantities in teaspoons and tablespoons. 3 teaspoons is equivalent to 1 tablespoon.

The cake recipe uses $\frac{3}{4}$ of a teaspoon of salt and 1 tablespoon of baking powder.
The ratio of salt to baking powder used in the recipe can be written in the form $1:n$. Find the value of n.

$n =$ .....

Question 6

Morgan is playing a computer game. They can score 0, 1, 2 or 3 points on each turn. They record their scores for 100 turns. The table shows the relative frequencies of their scores.

(a) Complete the table.

Score	0	1	2	3
Relative frequency	0.08	0.42	0.38	

(b) Morgan says "I scored more than 160 points in total in my 100 turns." Is Morgan correct? Show how you decide. .....

Question 7

A car accelerates at 4.06 m/s^2 for 10.1 seconds from an initial velocity of 2.93 m/s. Harper rounds each value to 1 significant figure.

Harper uses the rounded values and the **formula** $\boldsymbol{s = ut + \frac{1}{2}at^2}$ to estimate the distance travelled in the 10.1 seconds. Harper's answer is 430 metres. Using Harper's method, show that their answer is wrong.

(b) Rearrange this formula to make t the subject: $s = \frac{1}{2}at^2$

Question 8

A bag only contains red marbles, blue marbles and yellow marbles.

- The probability of picking a red marble is $\frac{2}{5}$.
- There are nine yellow marbles.
- The probability of picking a blue marble is three times as likely as picking a yellow marble.

Work out the total number of marbles in the bag. You must show your working.

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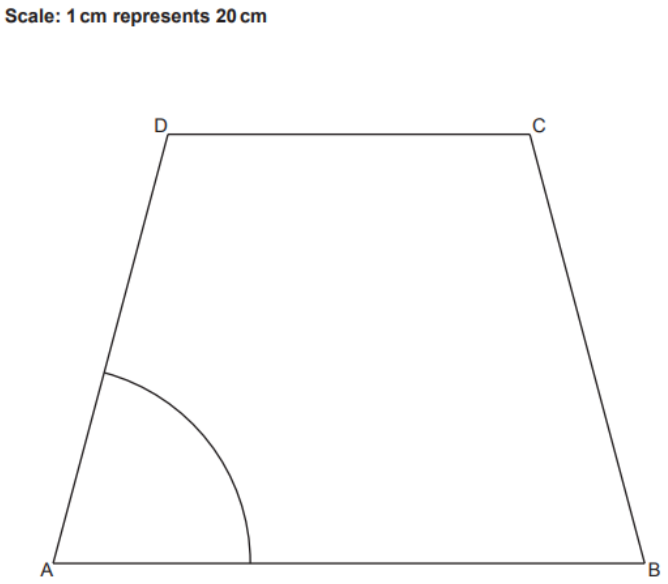
Question 9

The diagram shows the scale drawing of a sandpit, ABCD. It also shows the arc of all points in the sandpit that are 80 cm from corner A.



A game is played by throwing a ball into the sandpit. Points may be scored when the ball lands in the sandpit.

- 1 point if the ball lands within 80 cm of corner A,
- and 1 point if the ball is closer to side AB than side AD,
- and 1 point if the ball is closer to corner A than corner B.

By completing the construction, find and shade the regions where 2 points can be scored. Show all your construction lines.