Author: Brunelle Ndongala

This step-by-step solution guide has been created by **Brunelle Ndongala** for educational purposes. While we have made every effort to ensure the accuracy of the information presented, it is possible that there may be errors or omissions. We encourage users to critically evaluate and verify the content. BF Maths and the author cannot be held responsible for any errors or inaccuracies in this guide.

If you find any mistakes or have any suggestions for improvements, please contact us at bfmathshello@gmail.com. Your feedback is invaluable in helping us maintain the quality and accuracy of our resources. Please specify *which exercise* and *which question* in the email.

Thank you for using BF Maths for your maths revision!

1.4 Types of Data

1.

a) height of a house
↳ numerical observation so quantitative

b) hair colour
↳ word/category so qualitative

c) time taken to run 50m
↳ numerical observation so quantitative

2.

a) length of a worm
↳ can take any value in a given range so continuous

b) number of slugs
↳ can only take specific values so discrete

c) height of an ant
↳ can take any value in a given range so continuous

3.

Mass, x (kg)	Frequency
$35 \leq x < 40$	14
$40 \leq x < 45$	18
$45 \leq x < 50$	12
$50 \leq x < 55$	7

a) Data is continuous as it is measured and can take any value

b)

i) Third group class boundaries → between 45 and 50

ii) Class width = 5 within class boundary

iii) midpoint → $\frac{45 + 50}{2} = 47.5$

4.

Number of caterpillars	Number of trees
7	78
8	45
9	63
10	18

a) Data is discrete as they only have specific values

b) Stratified sample of size 20 from all trees in forest
↳ Divide the sample in the same proportion as the different strata (number of catepillars) and choose from each stratum at random.

$$\text{Proportionate stratified sample} = \left(\frac{\text{sample size}}{\text{population size}}\right) \times \text{Stratum Size}$$

population size = 204

$\frac{20}{204} \times 78 = 8$ (1 sf)

$\frac{20}{204} \times 45 = 4$ (1sf)

$\frac{20}{204} \times 63 = 6$ (1sf)

$\frac{20}{204} \times 18 = 2$ (1sf)

Proportions are 8, 4, 6, 2.

c) Data being collected is continuous (quantitative) data as it is a numerical observation and can take any value