Writing a hypothesis

Grade 3 | Worked solutions

GCSE Statistics topic practice

1 Here are four sentences about reading.

A	Do girls read more than boys?
B	Girls read more books each month than boys.
C	Reading is fun.
D	How many books did you read last month?

a. Write down the letter of the sentence that is a hypothesis. (1)

b. Give a reason for your answer to part (a). (1)

c. Explain why sentence A is not a hypothesis. (1)

(3 marks)

a)

B

b)

It is a statement

It can be tested by collecting data

c)

A is a question, not a statement

a) B b) statement that can be tested c) it is a question

2 Leila thinks that older pupils spend more time on homework. She is going to investigate the pupils in Year 7 and Year 11 at her school.

a. Write down a suitable hypothesis for Leila to test. (1)

b. Write down two pieces of data Leila needs to collect from each pupil. (2)

(3 marks)

a) a statement that can be tested with data

Year 11 pupils spend more time on homework

each week than Year 7 pupils

b)

The year group of the pupil

The time spent on homework in a week

a) Year 11 spend more time b) year group, time

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3 Jamal thinks that tall people have long feet. He is going to investigate the students in his class.

a. Write down a suitable hypothesis for Jamal to test. (1)

b. Write down the two measurements Jamal needs to take from each student. (2)

c. Jamal measures the students himself.
Is his data primary data or secondary data? Give a reason. (1)

(4 marks)

a) a statement that can be tested

The taller a student is

the longer their feet are

b)

The height of the student

The length of their foot

c)

Primary data

He collects the data himself

a) taller, longer feet b) height, foot length c) primary

4 Sofia writes this hypothesis: "Year 9 pupils get more pocket money than Year 7 pupils."
She asks 5 pupils from each year group how much pocket money they get each week.

Year 7 (£)	4	5	5	6	10
Year 9 (£)	6	7	8	9	10

a. Work out the mean amount for each year group. (2)

b. Does the data support Sofia's hypothesis? Give a reason for your answer. (1)

c. Give one reason why Sofia's conclusion may not be reliable. (1)

(4 marks)

a) Year 7

$4 + 5 + 5 + 6 + 10 = 30$

$30 \div 5 = £6$

Year 9

$6 + 7 + 8 + 9 + 10 = 40$

$40 \div 5 = £8$

b)

Yes, the Year 9 mean is higher

£8 is more than £6

c)

Only 5 pupils from each year were asked

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The samples are too small

a) £6 and £8 b) yes, Year 9 mean higher c) small samples

5 Ravi owns a cafe. He writes this hypothesis: "The cafe is better on Saturdays."

a. Explain why this is not a good hypothesis. (1)

b. Write a better hypothesis for Ravi to test. (1)

c. Describe the data Ravi needs to test your hypothesis and where he could get it. (2)

d. Describe what the data would show if your hypothesis is true. (1)

(5 marks)

a)

The word better is not clear

It does not say what to measure

b) say exactly what is being compared

The cafe takes more money on a Saturday

than on any other day of the week

c)

The money taken on each day

for several weeks

He can get this from the till records

d)

The mean for Saturdays is higher

than the mean for every other day

a) vague b) see above c) daily takings d) highest Sat mean

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