2021 ASSESSMENT MATERIALS

GCSE
MATHEMATICS (8300)
COMMON GRADES 4 & 5

Number

Total number of marks: 33 per optional item

Q15

Which of these fractions is closer in value to 1?

$\frac{3}{4}$ $\frac{13}{10}$

You **must** show your working.

(Total 2 marks)

Q14a

(a) Use your calculator to work out $9.95^2 \times 29.8$

Give your answer as a decimal.

Write down your full calculator display.

(Total 1 mark)

Q14b

(b) Is your answer to part (a) sensible?

Use approximations to decide.

You **must** show your working.

Tick a box.

☐ Sensible ☐ Not sensible

(Total 3 marks)

Q15

Show that there are **exactly** five 3-digit cube numbers.

(Total 3 marks)

Q18

x is greater than 5 **and** less than or equal to 9

Circle the inequality that shows this.

$5 \leq x < 9$ $5 > x \geq 9$ $5 \leq x > 9$ $5 < x \leq 9$

(Total 1 mark)

Q5

The length of a table is 110 cm to the nearest cm

Complete the error interval.

_____ cm ⩽ length < _____ cm

(Total 2 marks)

Q20a

n is an odd number.
p is a prime number.
In each part write down possible values of n and p so that

(a) $n + p$ is a square number.

n = _____ p = _____

(Total 1 mark)

Q20b

n is an odd number.
p is a prime number.
In each part write down possible values of n and p so that

(b) np is a square number.

n = _____ p = _____

(Total 1 mark)

Q16

A train has 1 first-class carriage and 6 standard carriages.

The first-class carriage has 64 seats.

$\frac{3}{8}$ are being used.

Each standard carriage has 78 seats.

$\frac{7}{13}$ in each carriage are being used.

Are **more than** half the seats on the train being used?

You **must** show your working.

(Total 5 marks)

Q5

Write 36 as a product of prime factors.

Give your answer in index form.

(Total 3 marks)

Q6

To the nearest pound, Jon has £9

To the nearest 50p, Ellie has £6.50

Work out the maximum possible total amount of money.

Answer £_____

(Total 3 marks)

Q23

In one hour a machine can make

600 nuts

or

720 bolts.

At 3 pm the machine starts working.
It makes 900 nuts and then changes to making bolts.

How many **bolts** will the machine make by 8 pm?

(Total 4 marks)

Q27

Work out $\frac{9.12 \times 10^{10}}{3.2 \times 10^{4}}$

Give your answer in standard form.

(Total 2 marks)

Q8

Write down **all** the whole numbers that

are between 20 and 50

and

have a difference of 4 between their digits.

(Total 2 marks)