



EXAM PAPERS PRACTICE

GCSE AQA Math 8300

Structure & Calculation

Question Paper

*"We will help you to
achieve A Star "*

Q1.

Here are some numbers.

9.6

12.6

15.4

7.6

12.4

17.4

Write the numbers in pairs so that the **sum** of the numbers in each pair is the same.

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.....

.....

.....

.....

.....

.....

Answer and

..... and

..... and

(Total 2 marks)

Q2.

Circle the fraction that is **not** equivalent to $\frac{3}{8}$

$\frac{6}{16}$

$\frac{9}{24}$

$\frac{12}{32}$

$\frac{15}{35}$

(Total 1 mark)

Q3. Estimate the value of

$$101.4^{\frac{1}{2}} + 6.43^{\circ} \times 7.99^{\frac{2}{3}}$$

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Answer

(Total 4 marks)

Q4.

Lucy says,

“3 is odd and 2 is even,
so when you add a multiple of 3 to a multiple of 2 the answer is always odd.”

Is she correct?

Write down a calculation to support your answer.

.....
.....

(Total 1 mark)

Q5. Put these in order starting with the smallest value.

$$\frac{13}{4}$$

$$3\frac{1}{2}$$

$$3.15$$

$$\sqrt{9}$$

You **must** show your working.

.....
.....
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.....
.....

Smallest

.....

.....

Largest

(Total 3 marks)

Q6. A shop bought a box of pencils for £2.
There were 10 pencils in the box.

(a) How much did one pencil cost?

.....

Answer pence

(1)

(b) The shop sold all the pencils for 25p each.

How much profit did the shop make?

.....

.....

.....

Answer pence

(2)

(Total 3 marks)

Q7.

Express $\frac{1}{\sqrt[3]{x^2}}$ in the form x^a

.....

.....

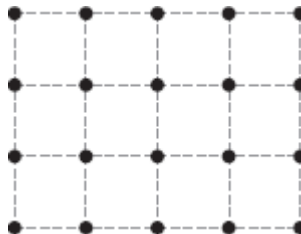
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Answer

(Total 3 marks)

Q8.

A 4×3 grid has 20 dots as shown.



(a) How many dots does an 8×6 grid have?

.....

Answer

(1)

(b) How many dots does a $4 \times y$ grid have?

.....

Answer

(1)

(c) How many dots does an $x \times y$ grid have?

.....

Answer

(1)

(d) How many dots does a $2x \times y$ grid have?

.....

Answer

(1)

(Total 4 marks)

Q9. A, B and C are sets of three cards.

- (a) Set B has the same **total** as Set A.
Set B has the same **median** as Set A.

Complete the cards in Set B.

Set A	12	18	15
Set B	20		

(2)

- (b) Set C has the same **total** as Set A.
Set C has the same **range** as Set A.

Complete the cards in Set C.

Set A	12	18	15
Set C	17		

(2)

Q10.

- (a) Use your calculator to work out $19.42^2 - \sqrt[3]{1006} \div 4.95$

Write down your full calculator display.

.....

.....

Answer

(1)

- (b) Use approximations to check that your answer to part (a) is sensible.

You **must** show your working.

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(2)

(Total 3 marks)

Q11.

$$x + y = 100$$

x is a square number.

y is a prime number.

Work out the values of x and y .

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.....

$x = \dots\dots\dots y = \dots\dots\dots$

(Total 2 marks)

Q12.

- (a) Work out 2.4×0.002

.....

Answer

(1)

- (b) Write 1.2×10^{-5} as an ordinary number.

.....

Answer

(1)

- (c) Write 2 500 000 in standard form.

.....

Answer

(1)

(Total 3 marks)

Q13. Write the number 4540 million in standard form.

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.....

Answer

(Total 2 marks)

Q14.

Show that $12 \cos 30^\circ - 2 \tan 60^\circ$ can be written in the form \sqrt{k}

where k is an integer.

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(Total 3 marks)

Q15.

Rationalise the denominator and simplify $\frac{10}{3\sqrt{5}}$

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Answer

(Total 2 marks)