

NAME _____

TEACHER _____

YEAR 9

END OF YEAR

**TEST
2017**

TIME ALLOWED: 1 HOUR

CALCULATORS NOT ALLOWED

Section A – mastery 29 marks

Q1. (a) Work out the value of $(3p - 2q - 7)^2$ when $p = 4$ and $q = -3$

..... $3 \times 4 - 2 \times -3 - 7 = 12 - 6 = 6$

.....

.....

Answer324.....

(3)

(b) Solve $7z + 2 = 9 - 3z$

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Answer $z =$

(3)

(c) Expand and simplify

i) $(2p - 5)(3p + 4)$

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.....

Answer

(3)

ii) $(p - 4)(p + 3)(p - 3)$

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Answer

(3)

(d) Simplify

$(2x^2y)^3$

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Answer

(3)

(Total 15 marks)

Q2. Use approximations to estimate the value of $\frac{4.34 \times 19.2}{11.2}$

You **must** show your working.

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Answer

(Total 3 marks)

Q3 (a) Make t the subject of $y = \frac{t}{3} - 2a$

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Answer

(2)

(b) Simplify the following:

(i) $\sqrt{72}$

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Answer

(2)

(ii) $5\sqrt{6} \times 3\sqrt{12}$

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Answer

(3)

(c) Evaluate $(4)^{-3}$

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Answer

(2)

(Total 9marks)

Q4. Express $0.\dot{7}5$ as a fully simplified fraction.

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(Total 2 marks)

Section B – GCSE 9-1 23 marks

Q5. Frank, Mary and Seth shared some sweets in the ratio 4 : 5 : 7
Seth got 18 more sweets than Frank.

Work out the total number of sweets they shared.

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(Total 3marks)

Q6. The table below shows the number of tonnes of rice produced in a year in five countries

Country	Rice produced (tonnes)
Brazil	7.82×10^6
China	1.43×10^8
India	9.9×10^7
Thailand	2.05×10^7
Vietnam	2.71×10^7

(a) Which country produced the most rice?

(a) [1]

(b) Write 2.71×10^7 as an ordinary number.

(b) [1]

(c) One tonne is equal to 1000 kilograms.

Change 7.82×10^6 tonnes to kilograms. Give your answer in standard form.

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(c) kg [2]

- (d) How many more tonnes of rice did Thailand produce than Brazil?
Give your answer in standard form.

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(d) tonnes (2)
(total 6 marks)

- Q7.** Paul drives along a road and covers a distance of 34 km in 20 minutes.
The speed limit of the road is 60 mph.
Did Paul exceed the speed limit?
You may use the conversion 5 mile = 8 kilometres.
Show all your working.

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(Total 3 marks)

- Q8.** Keen baker Maureen has $4\frac{2}{3}$ pounds of flour in her pantry. She decides to bake some bread and scones.
She uses $1\frac{3}{4}$ pounds for her scones and $2\frac{1}{3}$ pounds for her bread.
What percentage of her flour now remains?
You must show your working.

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Answer

(Total 4 marks)

Q9. John is going to make chocolate squares to sell.
There are just three ingredients, chocolate, peanut butter and crisped rice.
To make 30 squares he uses 600g of chocolate, 300g of peanut butter and 450g of crisped rice.

a) How much of each ingredient will he need to make 40 chocolate squares?

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chocolate g
peanut butter g
crisped rice g
(2)

b) A bar of chocolate weighs 200 g and costs £2.50.
A jar of peanut butter contains 250 g and costs £1.70.
A packet of crisped rice contains 300 g and costs £2.00.
John makes 4.5 kg of mixture, from which he can cut 100 chocolate squares.
He charges 60p for each square and sells all 100 squares.

How much profit does he make?

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(b) £ [5]

(total 7 marks)