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MATHEMATICS

YEAR 9 PRACTICE ENTRANCE TEST 1

TIME: 30 MINUTES

This question paper is designed to give an indication of the type of questions that are set, but cannot be exhaustive.

Name_____

Instructions to candidates

Calculators are allowed.

Answer as many questions as you can. Do not worry if you cannot answer a question; go straight to the next one.

Write your answers in the spaces provided on the question paper.

Show **all your working** on this paper.

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1. Calculate the following, **without using a calculator**, giving your answers in their simplest form.

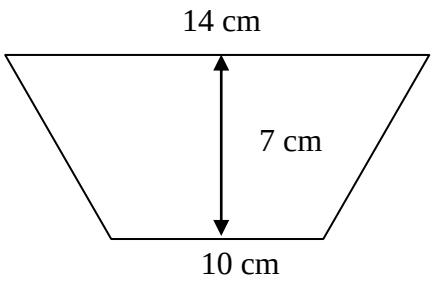
a) $3\frac{1}{5}-1\frac{2}{3}$ b) $2\frac{5}{6}\times\frac{3}{4}$

a) _____ b) _____

2. Evaluate, **without using a calculator** $7-5\times2+18\div(-3)$

Answer _____

3. Find the area of this shape



Answer _____

4. Use your calculator to work out:

$$\left(36.75-\frac{2.64}{579}\right)^3$$

Answer _____

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5. Many restaurants add a service charge to a bill. Sue and Rob went for a meal in a restaurant where the service charge was $12\frac{1}{2}\%$. The bill, before the service charge was added, was £38.50. How much was the total bill?

Answer _____

6. Simplify the following:

a) $2x + 3x$ *Answer* _____

b) $2m \times 3n$ *Answer* _____

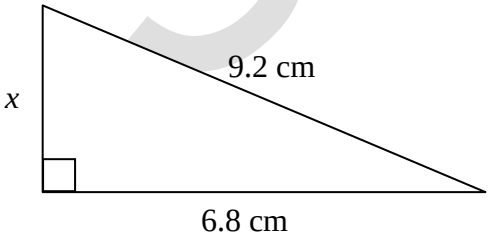
c) $d^2 \times d^3$ *Answer* _____

d) $6a(b - 2a)$ *Answer* _____

e) $2(3 - 5y) - 4(1 - 8y)$

Answer _____

7. Use Pythagoras' Theorem to calculate the length marked x, giving your answer to 3 s.f.



Answer _____

8. Mrs. Chips, the school cook, is planning to make mince pies. To make the pastry she mixes sugar, fat and flour in the ratio 6 : 7 : 12.
Calculate the amount of flour needed to make $2\frac{1}{2}$ kg of pastry mix, giving your answer in grams.

Answer _____

9. Solve the following equations:

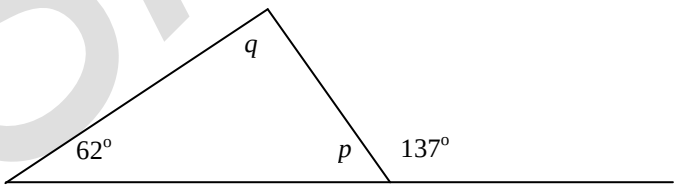
a) $3y + 17 = -4$

$y =$ _____

b) $2x + 3 = 18 - 3x$

$x =$ _____

10. Calculate the sizes of the missing angles.



$p =$ _____

$q =$ _____

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10. Mark and Kate each buy a family pack of crisps. Each family pack contains **ten bags** of crisps. The table shows how many bags of each flavour are in each family pack.

Flavour	Plain	Vinegar	Chicken	Cheese
Number of bags	5	2	2	1

a) Mark is going to take a bag of crisps at random from his family pack.

Complete these sentences.

The probability that the flavour will be …… is $\frac{1}{2}$

The probability that the flavour will be **cheese** is ……

b) Kate ate **two bags** of **plain** crisps from her family pack of 10 bags.

Now she is going to take a bag at random from the bags that are left.

What is the probability that the flavour will be **cheese**?

12. Calculate **without using a calculator**:

a) 0.3×0.2

b) $6.4 \div 0.02$

a) _____

b) _____

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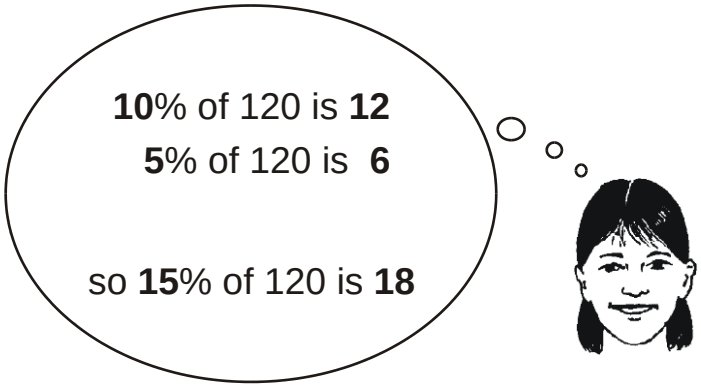
13. This is how Caryl works out **15% of 120** in her head.



(a) Show how Caryl can work out **17½% of 240** in her head.

.....% of 240 is .....
.....% of 240 is .....
.....% of 240 is .....
so $17\frac{1}{2}$% of 240 is .....

(b) Work out **35%** of **520**.
Show your working.

14. Use the π button on your calculator for this question.
The top of a table is circular and it has a diameter of 1.6m. Calculate:
a) The circumference of the table top.

Answer _____

b) The area of the table top.

Answer _____

The End