PERSE GIRLS SENIOR SCHOOL

MATHEMATICS
PRACTICE ENTRANCE PAPER 1

Entry to Year 9

TIME: 30 MINUTES

This question paper is based on the Key Stage 3 curriculum up to year 7. It is designed to give an indication of the type of questions that are set, but cannot be exhaustive.
Extension opportunities will be offered on the written paper and during the review with a member of staff.

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.

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

   a) $\dfrac{8}{9} - \dfrac{2}{3}$

   b) $15\% \ of \ 480$

   a) _____

   b) _____

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

   Answer _____

3. Find the highest common factor of 24 and 36.

   Answer _____

4. Use your calculator to work out:

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

   Answer _____

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. 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.
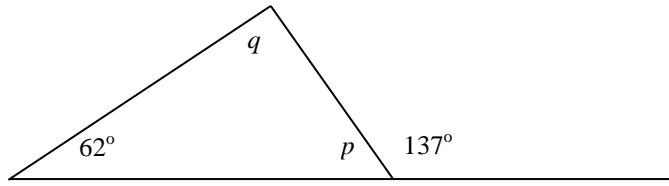   Calculate the amount of flour needed to make $2\frac{1}{2}$ kg of pastry mix, giving your answer in grams.

   Answer _____

8. Solve the following equation:

   $3y + 17 = -4$

                                   $y =$ _____

9. Calculate the sizes of the missing angles.

$p =$ _____

$q =$ _____

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**?
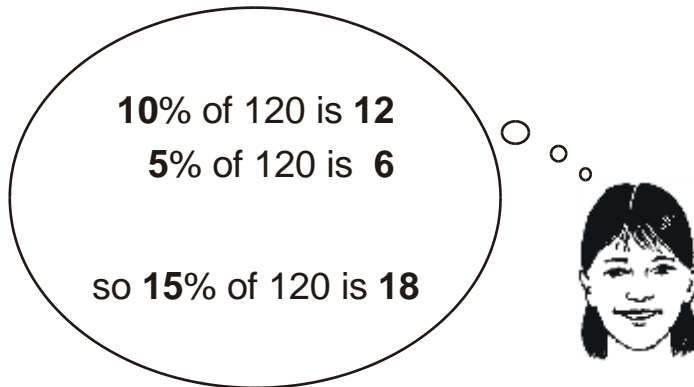
11. Calculate **without using a calculator**:

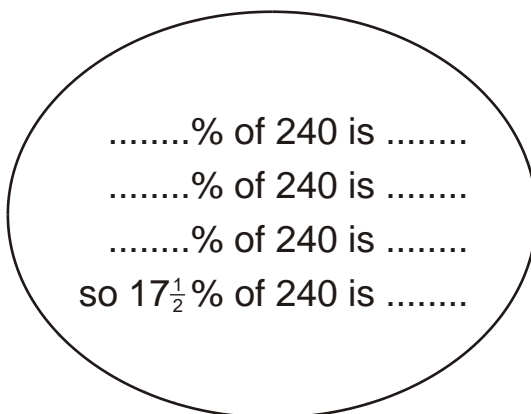a) 0.3×20 b) $64.8 \div 3$

a) _____   b) _____

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

10% of 120 is **12**
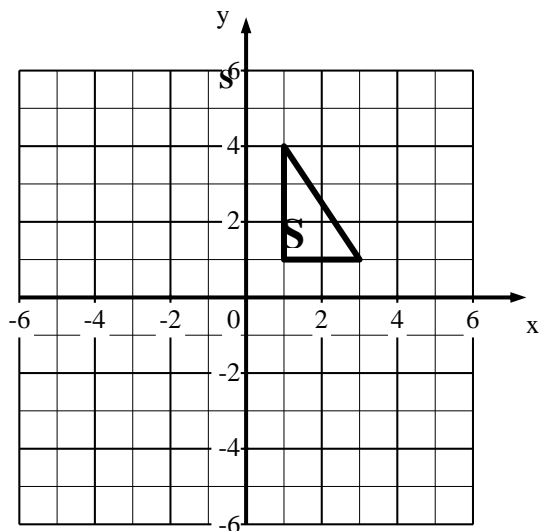
5% of 120 is **6**

so **15**% of 120 is **18**

(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.

13. a) Reflect shape S in the *y-axis* . Label the new shape T.

b) Rotate the new shape T through an angle of 90º anticlockwise using (0,0) as the centre of rotation. Label the new shape U.

c) Describe fully the transformation that will move shape U back onto shape S.

Answer _____

END OF TEST