Worksheet No. 1504
13+ Maths Non-Calculator
Total Marks: _____/24
Date: _____

1. What is the total cost of 50 stamps at 32p each?

Answer: ..... (2)

2. (a) James paid a total of £7.52 for two loaves of bread, three boxes of eggs and a bag of bananas.

One box of eggs costs £1.55 and one loaf of bread costs 97p.

How much did the bag of bananas cost?

Answer: ..... (4)

(b) The following week, James purchases the same items. However, he finds that he spends 25% more in total. The eggs and bananas have remained the same price.

What is the new price of one loaf of bread?

Answer: ..... (4)

Worksheet No. 1504

3. (a) Write each of the following numbers as the product of its prime factors:

(i) 20

Answer: ..... (1)

(ii) 56

Answer: ..... (2)

(b) Using your answer to part (a), or otherwise, write down

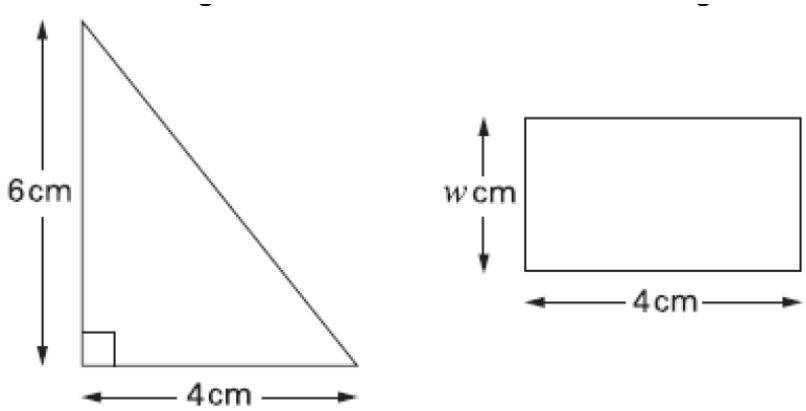
(i) the largest factor of both 20 and 56

Answer: ..... (1)

(ii) the smallest multiple of 20 and 56

Answer: ..... (2)

3. The area of the triangle is three times the area of the rectangle.



Work out the value of w:

Answer: ..... (3)

4. There are 47 guests accommodated in 19 rooms of a hotel. Each room has either 2 or 3 beds. Assuming that every guest sleeps in one bed only and that every bed is used, determine the number of rooms with 2 beds, and the number of rooms with 3 beds.

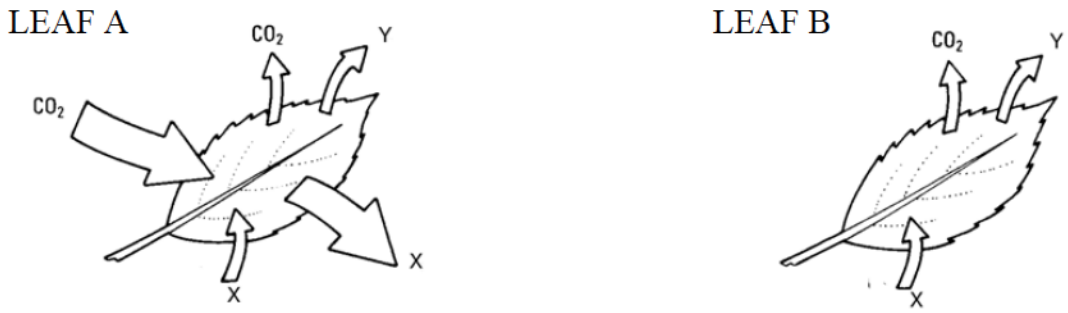
(Hint: Let x represent the number of rooms with 2 beds, and y represent the number of rooms with 3 beds)

Answer: ..... 2 bed rooms (5)
..... 3 bed rooms

Worksheet No. 1504

13+ Science
Total Marks: _____/29
Date: _____
Biology

1. The diagram below shows two leaves with arrows indicating substances entering and leaving the leaf. One leaf is shown in day conditions and the other is shown in night conditions.



(a) Name and write word equations for the two processes taking place in Leaf A. (4)

(b) How do you know which leaf is in daylight? (3)

(c) In Leaf A carbon dioxide is shown both entering and leaving the leaf. Will more enter or leave the leaf? (1)

(d) Suggest an identity for gas X. (1)

(e) Through which structure in the leaf do gases enter and leave? (1)

(f) Substance Y is shown to leave the leaf. Where does the plant take this up? How is its structure adapted for this role? (2)

Chemistry

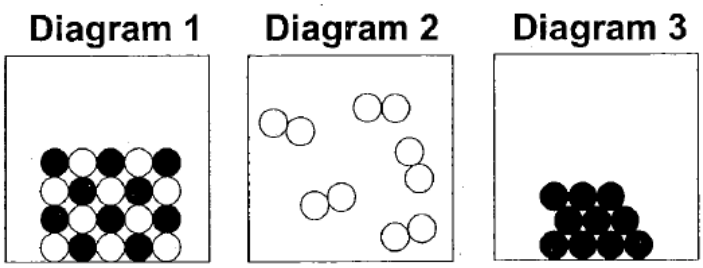
2. The table shows some properties of three substances at room temperature.

Substance	Colour	State
A	Green	Gas
B	Silvery	Solid
C	White	Solid

(a) Substance **A** reacts with substance **B** to make substance **C** only. (1)

Give one piece of evidence from the table that suggests that a chemical reaction has occurred.

The diagrams below represent the arrangements of particles in substances **A, B** and **C**



(b) Which diagram represents substance **A**? How did you get to your answer? (2)

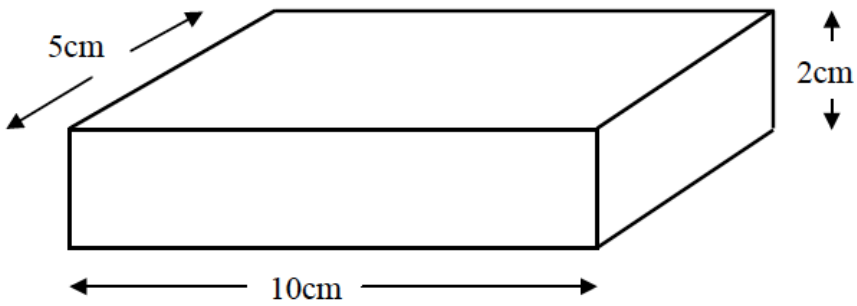
(c) Which diagram represents the product of the reaction between **A** and **B?** How did you get to your answer? (2)

(d) 2.7g of substance **A** reacts with substance **B** to make 6.4g of substance **C**. What mass of substance **B** reacted? (1)

Worksheet No. 1504

Physics

3. A block of gold is shown below.



(a) Calculate the volume of the block (2)

(b) The mass of the block is 1930g. Calculate the density of gold using the formula density = mass ÷volume. Give the unit for your answer. (3)

(c) On Earth, a 100g block weighs 1N. What is the weight of above block of gold? (1)

(d)

A King has had his crown of pure gold repaired by his goldsmith . The King becomes suspicious that the goldsmith has swapped the crown.

Using the value found in (b), describe a test to determine whether the crown is made of pure gold. (5)