SHEET 2

1. Write down the next two terms of the following sequence.

   40, 36, 30, 22, ……

2. a) Simplify $6x - 8y - 4x + 3y$.
   b) Expand $3(x - 5)$.
   c) Find the value of $4c - 5d$ when $c = -4$ and $d = 3$.

3. Fifty people were asked how many pets they owned. The results were as follows.

Number of pets owned	0	1	2	3	4	5
Number of people	4	6	15	14	7	4

   a) What is the probability that a randomly chosen person from this group has exactly 2 pets?

   b) Calculate the mean number of pets owned by the fifty people.

   {Hint: mean = $\frac{\text{total number of pets}}{\text{50 people}}$**.}**

4. The Smith family go on holiday to Mallorca, when the exchange rate is £1 = 286 pesetas.

   a) They exchange £450 into pesetas. How many pesetas did they get?

   b) Whilst on holiday they bought 25 postcards at 85 pesetas each and stamps for the postcards at 70 pesetas each. Calculate how much in £s, correct to the nearest penny, this cost them.

5. The following table shows the favourite colours of a group of friends.

Colour	RED	BLUE	GREEN	ORANGE
Frequency	8	6	7	9

   Draw a pie chart to show these results.
   You must show how you calculate each angle.

6. Mr. B. Riches has just received his gas bill for the July to September quarter.
   The details of the bill are as follows:

Previous meter reading	11 215
Present meter reading	11 712
Cost per unit is 7 pence	
Fixed standing charge per quarter	£12·32.

   a) Find the total cost of the gas bill.

   b) V.A.T. of 5% is charged on gas bills. How much is Mr. Riches bill inclusive of V.A.T?

7. a) Expand i) $5x(x - 3)$ ii) $3x(x^2 - 2)$.

b) Expand and simplify $4(3x - 1) + 5(x - 2)$.

8. Use your calculator to find the values of i) $\dfrac{\sqrt{1221.5}}{21.2^2 - 154.72}$

ii) $\dfrac{51.65^2 - 17.8 \times 12.21}{11.2 + 5.68^2}$,

correct to 2 decimal places. **{Hint: brackets!}**

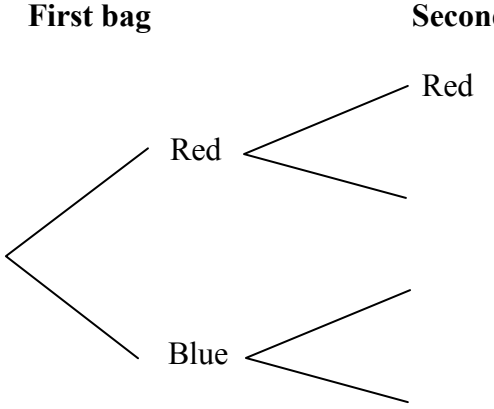
9. Write the following numbers in **standard form.**

a) 80 b) 2128.6 c) 6.5 d) 0.61
e) 0.0245.

10. The following numbers have been written in standard form. Write **each** in decimal form. a) 8.5×10^4 b) 8.6×10^{-4}.

11. A solution of the equation $x^3 - 3x = 12$ lies between $x = 2$ and $x = 3$.
Use the method of trial and improvement to find this solution correct to one decimal place.

12. a) A bag contains 5 red balls and 3 blue balls. Another bag contains 4 red and 5 blue balls. John takes one ball from each bag without looking. Copy and complete this tree diagram to show the possible outcomes and their probabilities.



b) What is the probability that John takes

i) two reds, ii) exactly one red?

ANSWERS.

1. 12, 0.

2. a) $2x - 5y$ b) $3x - 15$ c) -31.

3. a) $\frac{3}{10}$ b) 2.52.

4. a) 128700 pesetas b) £13.55.

5. RED = 96^o, BLUE = 72^o, GREEN = 84^o, ORANGE = 108^o.

6. a) £47.11 b) £49.47.

7. a) i) $5x^2 - 15x$ ii) $3x^3 - 6x$ b) $17x - 14$.

8. i) 0.12 ii) 56.38.

9. a) 8×10^1 b) 2.1286×10^3 c) 6.5×10^0
   d) 6.1×10^{-1} e) 2.45×10^{-2}.

10. a) 85000 b) 0.00086.

11. $x = 2.7$ to 1 decimal place.

12. b) i) $\frac{5}{18}$ ii) $\frac{37}{72}$.