SHEET 2
NO CALCULATOR ALLOWED

1. Use the fact that $24 \times 61 = 1464$ to write down the answers to the following.
   a) 2.4×6.1 b) 12×610 c) $146.4 \div 61$.

2. Find the value of a) $5^3 \times 3^2$ b) $24.3 - 15.73$
   c) 2.4×3.8.

3. Thomas regularly watches his local football team. Tickets cost £6 to watch a home game and £8 for an away game.

   Over the past few months he bought x tickets for home games.

   a) Write down, in terms of x, the total cost (in pounds) of these home game tickets.
   b) The number of tickets he bought for away games was 5 less than the number of tickets he bought for home games. Write down, in terms of x, how many away game tickets Thomas bought.
   c) Write down, in terms of x, the total cost (in pounds) of these away game tickets.
   d) Write down, in terms of x, the total cost (in pounds) of all the tickets Thomas has bought. You must simplify your answer as far as possible.

4. Write down the following numbers correct to 2 significant figures.

   a) 2.652 b) 4.961 c) 21.411 d) 0.06261
   e) 0.019612 f) 0.1065 g) 0.1716 h) 2901
   i) 1863 j) 1960.

5. In a game, a player throws two fair dice, one coloured red the other blue.
   The score for the throw is the difference between the two numbers showing. For example:

   if the red dice shows 4 and the blue dice shows 2, the score for the throw is 2;
   if the red dice shows 1 and the blue dice shows 6, the score for the throw is 5.

   a) Complete the following table to show all the possible scores.

		BLUE DICE					
		1	**2**	**3**	**4**	**5**	**6**
RED DICE	**1**	0	1	2	3	4	5
	2	1	0	1			
	3	2					
	4	3					
	5	4					
	6	5					

   b) What is the probability that a player scores 2 ?

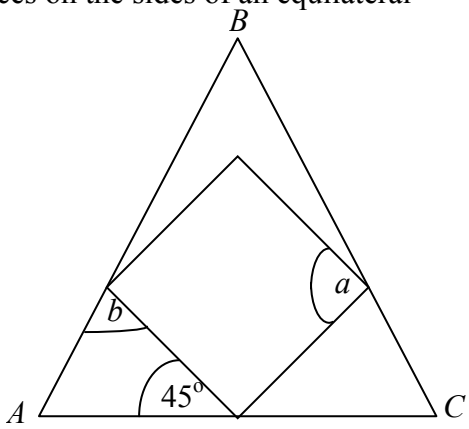
A player wins a prize by getting a score of less than 2.

c) Bob plays the game once. What is the probability that he wins a prize?

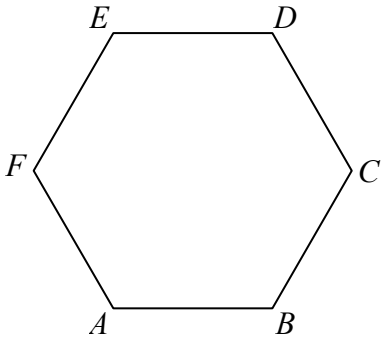
d) i) 360 people each play the game once. Approximately how many would you expect to win a prize?

ii) It costs 10 pence to play the game once. The prize for winning is 20 pence If the 360 people each play the game once, approximately how much profit do you expect the game to make?

6. The diagram shows a square with three of its vertices on the sides of an equilateral triangle *ABC*. Find the angles marked *a* and *b*.



7. The following shows a regular hexagon, *ABCDEF*.



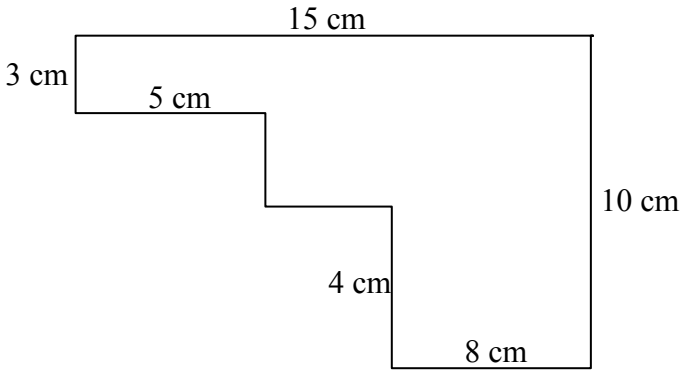
a) Calculate the size of angle *EDC*.

Point *D* is due north of point *B* and point *A* is due west of point *B*.

b) Calculate the bearing of point *C* from point *B*.

c) Calculate the bearing of point *E* from point *B*.

8.



Clearly indicating the units, calculate

a) the perimeter of the above figure,

b) the area of the above figure.

ANSWERS.

1. a) 14.64 b) 7320 c) 2.4.

2. a) 1125 b) 8.57 c) 9.12.

3. a) £6x b) $x - 5$ c) $8(x - 5)$ d) $14x - 40$.

4. a) 2.7 b) 5.0 c) 21 d) 0.063
   e) 0.020 f) 0.11 g) 0.17 h) 2900
   i) 1900 j) 2000.

5. a)

BLUE DICE

RED DICE	**1**	**2**	**3**	**4**	**5**	**6**
1	0	1	2	3	4	5
2	1	0	1	2	3	4
3	2	1	0	1	2	3
4	3	2	1	0	1	2
5	4	3	2	1	0	1
6	5	4	3	2	1	0

   b) $\frac{8}{36}$ or $\frac{2}{9}$ c) $\frac{16}{36}$ or $\frac{4}{9}$ d) i) 160 ii) £4.

6. $a = 90^o$, $b = 75^o$.

7. a) 120^o b) 030^oN c) 330^oN.

8. a) 50 cm b) 107 cm^2.