

ELGIN ACADEMY

Prelim Examination 2006 / 2007

MATHEMATICS Standard Grade - Foundation Level

Paper II

Time Allowed - 40 minutes

First name and initials

Surname

Class

Teacher

Read Carefully

1. Answer as many questions as you can.
2. Write your answers in the spaces provided.
3. Full credit will be given only where the solution contains appropriate working.
4. **You may use a calculator**

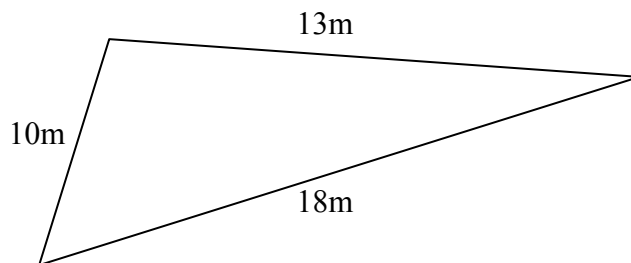
1. Peter has been in training for running a marathon.

Over a period of 5 days he ran these distances:	Monday	16.2 km
	Tuesday	19.4 km
	Wednesday	15.7 km
	Thursday	23.2 km
	Friday	22.5 km

Find the mean distance Peter ran over the 5 days.

(3)

2. Farmer Morrow is building a pen for his sheep. Here is a sketch of it.



The farmer bought 40 metres of fencing.

Does he have enough to build his pen?

YOU MUST GIVE A REASON FOR YOUR ANSWER.

(3)

3. Here is part of the calendar for 2007.

MAY 2007						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Laura is getting married on the third Friday of May 2007.

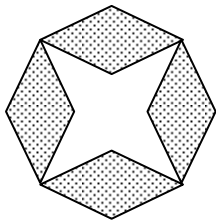
(a) Write down the date of her wedding. (1)

Laura and three of her friends are going on holiday for a week before the wedding. This table is in their holiday brochure. Prices are per person.

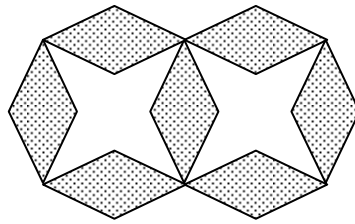
Departure date	Waterfront Hotel		Imperial Hotel		Preluna Hotel	
	7 nights	14 nights	7 nights	14 nights	7 nights	14 nights
07 Apr - 15 Apr	369	513	304	389	356	502
16 Apr - 22 Apr	382	536	319	412	365	524
23 Apr - 30 Apr	429	564	365	439	423	553
01 May - 10 May	389	519	329	415	389	529
11 May - 17 May	375	503	329	412	386	525

(b) How much, **in total**, will it cost Laura **and** her three friends to stay in the Imperial Hotel for 7 nights, departing on 18 April 2007? (3)

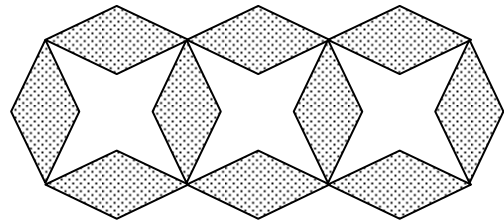
6. These patterns are made up from a number of rhombus shapes tiles.



Pattern 1 – 4 tiles



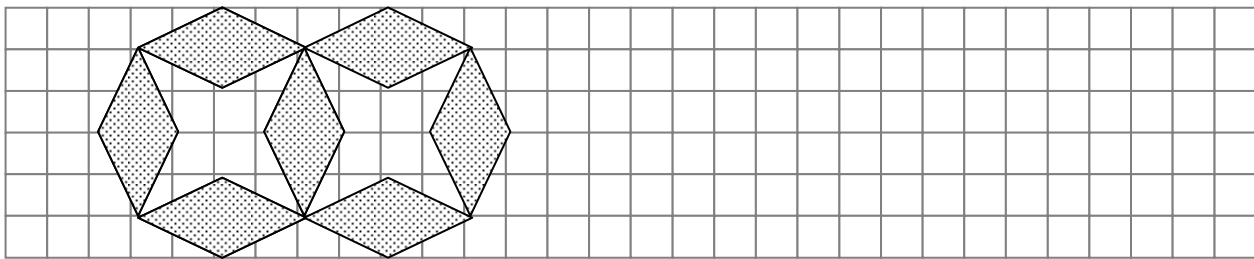
Pattern 2 – 7 tiles



Pattern 3 – 10 tiles

(a) Complete **pattern 4** on the grid below.

(2)



(b) Complete this table to show the number of rhombus shaped tiles in each pattern.

(3)

Pattern Number	1	2	3	4	5	6		10
Number of Tiles	4	7	10					

(c) Write down a rule, in words, for finding the number of tiles needed for any pattern number.

(2)

7. Norrie is a tiler. He fits tiles on walls and floors.
 He uses this rule to work out how long it will take him to fit the tiles.

$$\text{Number of minutes} = (\text{number of tiles} \div 12) \times 15$$

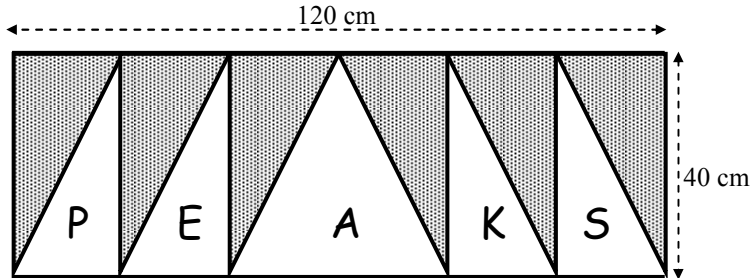
How long would it take Norrie to fit 156 tiles?

Give your answer in hours and minutes.



(3)

8. A shop which sells climbing equipment uses this sign above its door.
 All the shaded triangles have the same area.



Calculate the area of **one** of the shaded triangles.

(4)

9. Caroline is going to work abroad as a holiday rep. She is allowed to take a maximum of 50kg of luggage with her on the plane.

If the weight of her luggage is more than 50kg she has to pay £7.50 for **each kg (or part of a kg) above 50kg**.

Here is the luggage that Caroline wants to take.



How much extra will Caroline have to pay?

(5)

10. A mobile phone costs £308.

It can be bought by paying a deposit of £20 and then 24 equal payments.

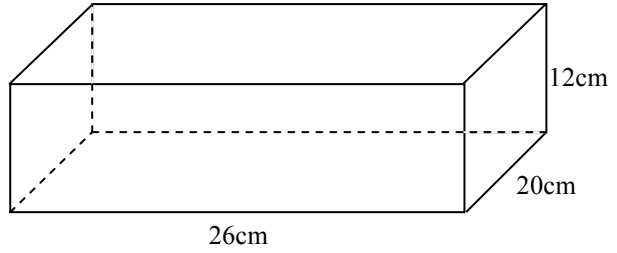
How much would each payment be?

(3)

11. Layla has just bought a new music player.

It came in a box that measured 26 cm long, 20 cm wide and 12 cm high.

(a) Calculate the volume of the box.



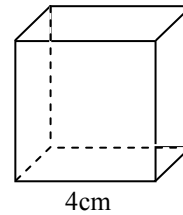
(2)

(b) Layla's younger brother uses the box to store his building bricks.



Each brick is a cube of side 4cm.

Find the **maximum** number of bricks that could be fitted into the box.



(3)

12. The number of hours spent surfing the net one evening by a group of S4 pupils is given below:

2	5	3	4	2
1	4	1	5	4
4	3	2	3	3
3	4	3	2	1

(a) Complete this frequency table:

Number of Hours	Tally	Frequency
1		
2		
3		
4		
5		

(3)

(b) What is the modal number of hours spent surfing the net?

(1)

