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S.31

JUNIOR CERTIFICATE EXAMINATION, 1992

22336

MATHEMATICS – FOUNDATION LEVEL

THURSDAY, 11 JUNE – MORNING, 9·30 to 11·30

Attempt all questions.
All questions are of equal value.

Mathematics Tables may be obtained from the Superintendent.

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1. Prize money of IR£4980 is divided equally between five people.
How much does each receive?

2. In the following bill the cost of the sugar was omitted:

Tea	IR£2·83
Sugar	
Butter	IR£2·15
Bread	IR£0·65
Total	IR£7·32

Calculate the cost of the sugar.

3. The heights in metres of six pupils in a class were as follows:

1·80, 1·64, 1·59, 1·73, 1·60, 1·66

Find the average (mean) height of the six pupils.

4. Some of the train time-table from Limerick to Dublin is shown below.

Departs Limerick	Arrives Dublin
08·30	10·35
09·35	12·10
15·10	17·40

Write down the length, in hours and minutes, of each journey from Limerick to Dublin.

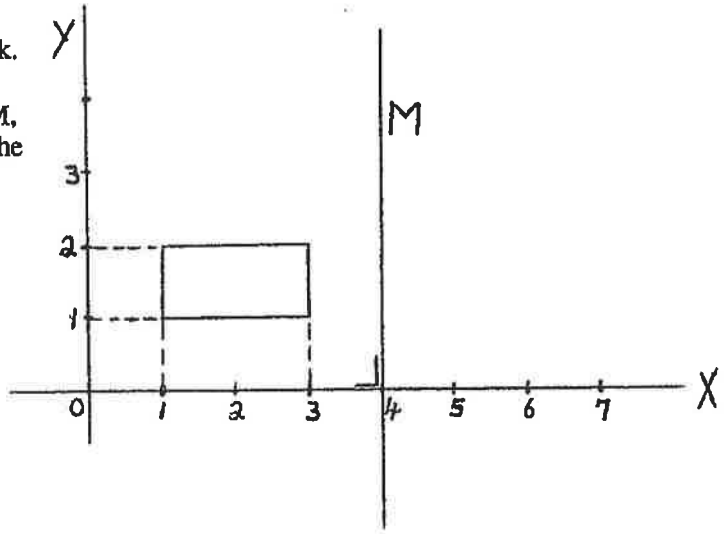
5. A train travels a distance of 192 km in 2·4 hours.

Find the speed of the train in km/hr.

OVER→

6. Copy the diagram into your answerbook.

Under the axial symmetry in the line M, draw in the image of the rectangle in the diagram.



7. A pupil bought a school book for IR£5·76.
Two years later the pupil sold the book for IR£4·80 .

(i) Calculate the loss.

(ii) Express this loss as a percentage of the buying price of the book.

8. Find the value of

(i) $4x + 3$ when $x = 3$

(ii) $2x + 3y$ when $x = 5$ and $y = 2$

9. Complete the table below for the values of x shown given that $y = 2x + 3$.

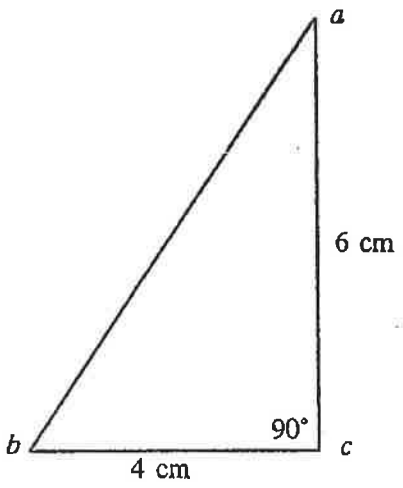
x	0	1	2	3
y				

Draw the graph of $y = 2x + 3$ from $x = 0$ to $x = 3$, $x \in Q^+$.

10. Calculate the area of the triangle *abc* where

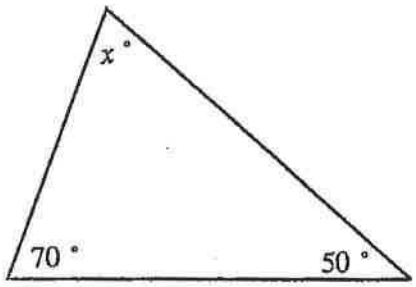
$|bc| = 4$ cm, $|ca| = 6$ cm

and $|\angle acb| = 90°$.



11. The measures of the three angles of a triangle sum to 180 °.

Calculate the value of x .



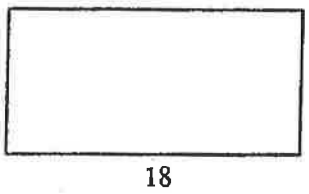
12. Use your tables if you wish, pages 20 – 25, to calculate

(i) the square of 16

(ii) the square of 7·4

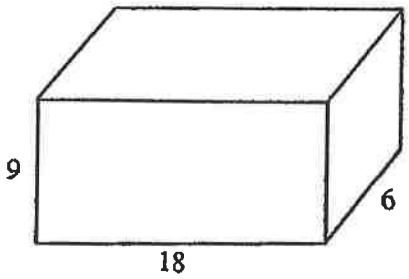
(iii) the square root of 2¼

13. *(i)* Calculate the area of the rectangle of length 18 and width 6.



(ii) Calculate the volume of the rectangular box of length 18, width 6 and height 9.

(iii) How many cubes, of side of length 3, will exactly fill this rectangular box?

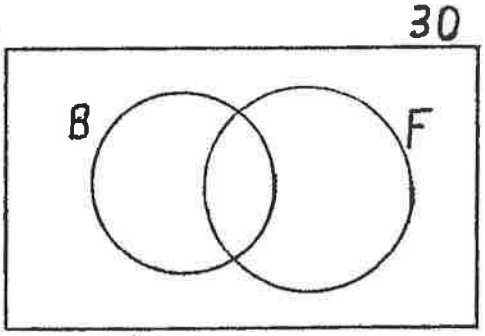


14. A shop assistant has a gross yearly pay of IR£8320. The assistant has a tax-free allowance of IR£4500 and pays income tax on what remains at the rate of 32% in the IR£.

(i) What is the taxable pay for the year?

(ii) Calculate the amount of tax paid in the year.

15. In a class of 30 pupils, 12 play Basketball (B), 16 play football (F), 5 play both games.



Copy the Venn diagram into your answerbook.

Find

(i) the number of pupils who play basketball only.
(ii) the number of pupils who play football only.
(iii) the number of pupils who play neither.

OVER →

16. Copy the rectangle *abcd* into your answerbook.
Construct the image of the rectangle *abcd* under the translation $\overrightarrow{bc}$.

17. Evaluate

(i) $\frac{1}{3}\left(\frac{1}{2} + \frac{5}{8}\right)$

(ii) $\frac{1}{3}\left(\frac{4}{5} + \frac{7}{10}\right)$

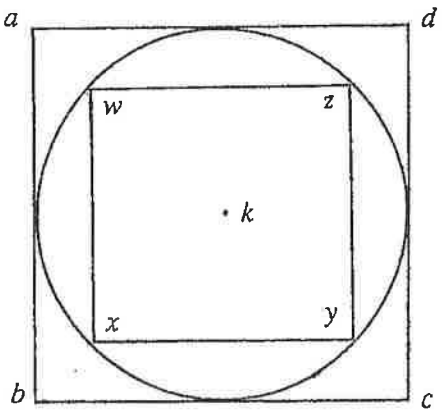
State which answer is the bigger and by how much.

18. A survey of 180 people on a Sunday morning shows that
105 people bought one newspaper only
60 people bought two newspapers only
the rest bought three newspapers.

How many people bought three newspapers?

Draw an accurate pie-chart to contrast the data.
Note: 180 people represent 360°.

19. *abcd* is a square circumscribed about the circle with centre *k* and *wxyz* is a square inscribed in the same circle.
The radius of the circle is of length 2 cm.



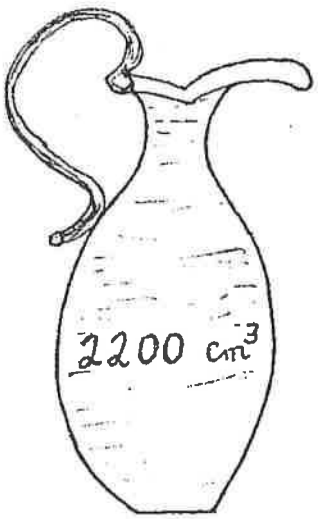
Calculate

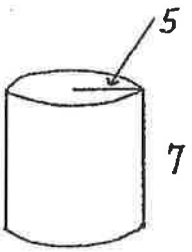
(i) $|ad|$

(ii) area of *abcd*

(iii) area of *wxyz*, given that 2 (area of *wxyz*) = area of *abcd*.

20. A jug, filled with water, has a volume of 2200 cm^3.
A cylinder has height 7 cm and radius length 5 cm.





(i) Calculate the volume of the cylinder taking $\pi = \frac{22}{7}$

(ii) How many such cylinders can be filled from one jugful of water?