Revision Exercise 3

(1)   (i) Write down a ratio equivalent to $2 : 8 : 5$.

(ii) Write down the number of faces, edges and vertices of a square pyramid.

(iii) Write down $1\frac{2}{5}$ as a decimal number.

(iv) Find the value of $64 - 125 \div 5$.

(v) Solve $2x + 8 = 16$.

(vi) Write down the ratio $14 : 49 : 35$ in its simplest form.

(vii) Find the highest common factor and least common multiple of 63 and 42.

(viii) Construct the straight line segment AB of length 6 cm.

(ix) Construct a circle of radius 4 cm.

(x) Write down the number of faces, edges and vertices in a triangular prism.

(xi) Write down all possible outcomes of the experiment of rolling an unbiased cubic die which has its six sides marked $1, 2, 3, 4, 5$ and 6.

(xii) The length and width of a rectangular land drawn to the scale $1 : 200$ are 7 cm and 2.5 cm respectively. Find the actual length and width of the land.

(xiii) In a nutritious instant food packet, green gram, soya and rice are mixed in the ratio $1 : 1 : 3$. Find the amount of rice that is included in one such 100 g food packet.

(xiv) Write down Euler's relationship.

(xv) Construct an equilateral triangle of side length 8 cm. Name it ABC.

(2) The floor plan of a restroom in a tourist inn is shown below.

(i) The living room is square shaped. What is the length of a side of this room?

(ii) Find the area of the living room.

(iii) Find the area of the room.

(iv) Find the area of the toilet.

(v) Find the total perimeter of the restroom.

6 m

2 m
1 m

A   B

C   2 m

3 m

2 m

3 m

A - Living room
B - Room
C - Toilet

(vi) It is required to tile the floor of the room with 50 cm $\times 50$ cm square tiles. Find the number of tiles that can be laid in a widthwise row and the number of tiles that can be laid in a lengthwise row. Thereby, obtain the total number of tiles that is required for this purpose.
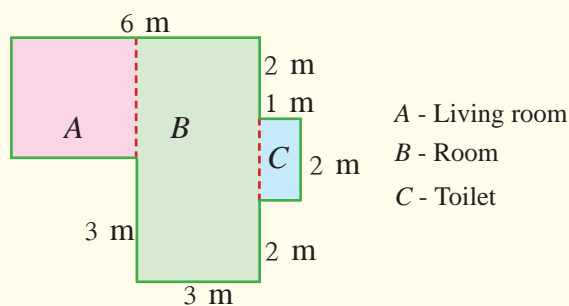
(vii) Draw a scale diagram of this floor plan using the scale 1 : 100.

(viii) What is the ratio of the length of the room to that of the toilet?

(3) (a) It has been decided to recruit male and female workers to a newly opened garment factory in the ratio 4 : 9.

   (i) If the total number of workers that are to be recruited is 260, find separately, the number of male and female workers that are to be recruited.

   (ii) The ratio of the monthly salary of a male worker to that of a female worker is 5 : 4. If the monthly salary of a female worker is Rs 24 000, find the monthly salary of a male worker.

(4) 25 contestants participated in the 1st round of a poetry recitation competition. 12 contestants qualified for the 2nd round.

   (i) Express the number of contestants who qualified for the 2nd round as a fraction of the total number of contestants.

   (ii) Express the number of contestants who qualified for the 2nd round as a percentage of the total number of contestants.

(5) An incomplete figure of a motor car which has been drawn in a Cartesian plane is shown here.
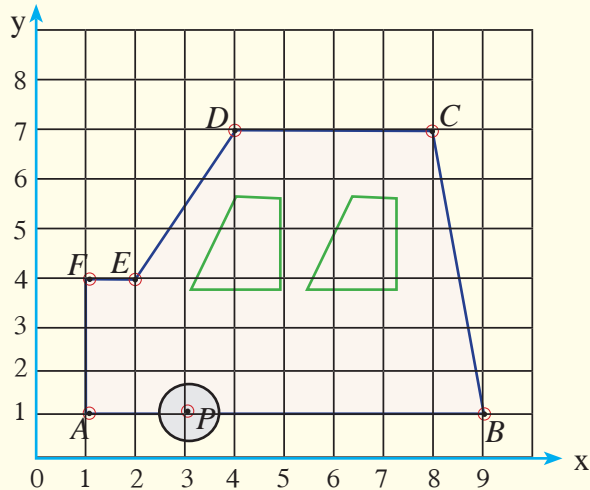
   (i) Draw this diagram in a Cartesian plane.

   (ii) Which point is represented by the ordered pair (4,7)?

   (iii) Write down the coordinates of the points A, P, B, C, D, E and F as ordered pairs.

   (iv) If the coordinates of the centre of the back wheel is (7, 1), mark this centre and draw the wheel.

For Free Distribution

(6)   (i) Construct a circle of radius 6 cm.

    (ii) Construct a regular hexagon with its vertices on this circle.

    (iii) Construct an equilateral triangle on each side of the hexagon, external to it.

    (iv) Find the perimeter of one of the two largest triangles that you get when you complete the above step.

    (v) What is the shape you get when you connect the vertices of the 6 equilateral triangles that do not lie on the original hexagon?

(7)   (i) 5 m is represented by 1 cm in a scale diagram. Express this scale as a ratio.

    (ii) Find the actual length of a house which is represented by 8 cm in a scale diagram drawn to the scale 1: 200.

    (iii) The length of a school building is 20 m and its width is 6 m. Draw a scale diagram of this building using the scale 1 : 100.

(8) A net of a solid object is shown here. There are 6 equal squares of side length 6 cm.
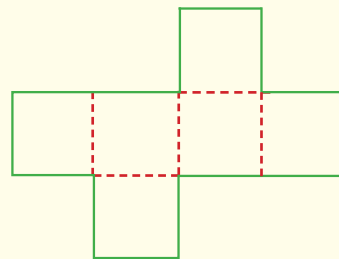
    (i) Write down the name of the solid that can be constructed by folding along the dotted lines.

    (ii) Considering the number of vertices, edges and faces of this solid object, show that Euler's relationship is satisfied by these values.

    (iii) Obtain the total surface area of the solid by finding the area of each face.

    (iv) Find the length of an edge of a solid of the same shape whose total surface area is 384 cm^2.

    (v) Show that the volume of that solid is 512 cm^3.

(9) A prism is shown in the figure. The triangular faces are isosceles.
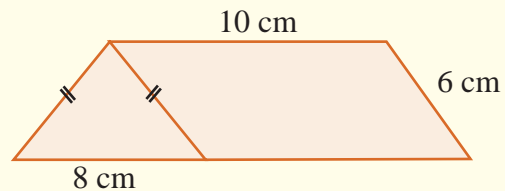
    (i) Draw the 3 rectangular faces of the prism separately and mark their dimensions.

    (ii) Find the area of each of these faces separately.

    (iii) There are 10 edges and 6 vertices in a solid with plane faces. Find the number of faces that the solid has using Euler's relationship.
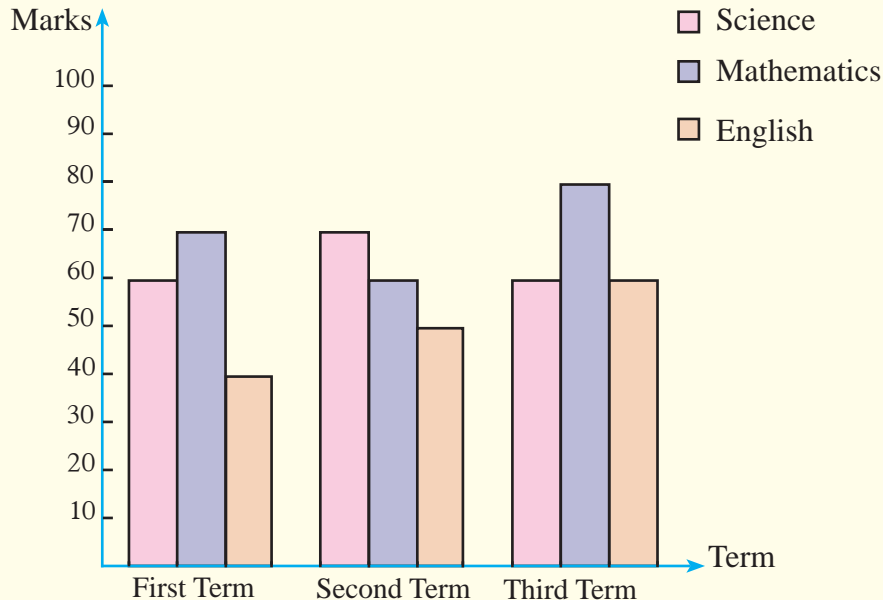
10 cm

6 cm

8 cm

(10) (i) From the following plane shapes, select the ones that can be used for pure tessellation.

(a)   (b)   (c)   (d)
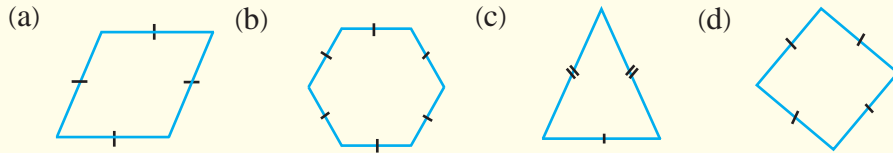
(ii) Select and separately write down the pure tessellations and the semi pure tessellation.

(a)   (b)   (c)
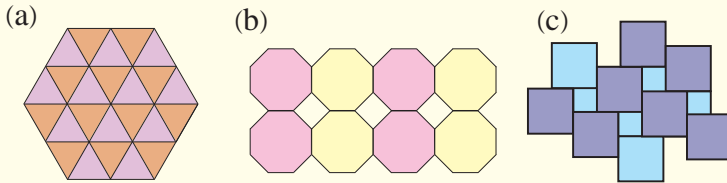
(11) The marks obtained by a student during 3 terms for Mathematics, Science and English are shown in the multiple column graph.

(i) Which subject shows a continuous increase in the marks?

(ii) For which subject has the student obtained identical marks in two terms?

(iii) By how many marks has the total marks obtained in the 3rd term for all 3 subjects increased when compared with the total marks obtained in the 1st term for all 3 subjects?

(12) If each employee is provided with 7.5 metres of material to sew uniforms, calculate the number of metres of material that is required for 12 employees.

(13) If the thickness of a DVD is 2.3 mm, find the thickness of a package consisting of 5 such DVDs.

Lesson Sequence

Content	Number of Periods	Competency levels
First Term		
1. Bilateral Symmetry	05	25.1
2. Sets	05	30.1
3. Mathematical Operations on Whole Numbers	04	1.1
4. Factors and Multiples	11	1.3, 1.4
5. Indices	06	6.1
6. Time	05	12.1
7. Parallel Straight Lines	03	27.1
8. Directed Numbers	06	1.2
9. Angles	07	21.1, 21.2
	52	
Second Term		
10. Fractions	10	3.1
11. Decimals	05	3.2
12. Algebraic Expressions	06	14.1, 14.2
13. Mass	06	9.1
14. Rectilinear Plane Figures	06	23.1, 23.2
15. Equations and Formulae	08	17.1, 19.1
16. Length	08	7.1, 7.2
17. Area	06	8.1
18. Circles	04	24.1
19. Volume	05	10.1
20. Liquid Measurements	04	11.1
	68	
Third Term		
21. Ratios	05	4.1
22. Percentages	05	5.1
23. Cartesian Plane	05	20.1
24. Construction of Plane Figures	05	27.2
25. Solids	05	22.1, 22.2
26. Data Representation and Interpretation	08	28.1, 29.1
27. Scale Diagrams	06	13.1
28. Tessellation	05	26.1
29. Likelihood of an Event Occurring	06	31.1, 31.2
	50	
Total	170	

Glossary

Acute - angled triangle	සුළු කෝණී තිකෝණය	கூர்ங்கோண முக்கோணி
Area	වර්ගඵලය	பரப்பளவு
Biased	නැඹුරු	சமநேர்தகவற்ற
Category	පුවර්ග	வகைகுறி
Centre	කේන්දුය	மையம
Circle	වෘත්තය	வட்டம்
Closed plane figures	සංවෘත තලරූප	மூடிய தளவுரு
Column graph/ bar graph	තීර පුස්තාර	சலாகை வரைபு
Compound plane figures	සංයුක්ත තලරූප	கூட்டுத் தளவுருக்கள
Concave polygon	අවතල බහු-අසුය	குழிவுப் பல்கோணி
Construction	නිර්මාණය	அமைப்பு
Convex polygon	උත්තල බහු-අසුය	குவிவுப் பல்கோணி
Cartesian plane	කාටීසීය තලය	தெக்காட்டின் தளம்
Coordinates of a point	ලක්ෂායක බණ්ඩාංක	புள்ளியொன்றின் ஆள்கூறுகள
Cube	සනකය	சதுரமுகி
Cuboid	සනකාභය	கனவுரு
Data	දත්ත	தரவுகள்
Desired units	අභිමත ඒකක	எதேச்சை அலகுகள்
Diameter	විෂ්කම්භය	விட்டம
Edge	දාරය	விளிம்பு
Equilateral triangle	සම්පාද තිකෝණය	சமபக்க முக்கோணி
Equilateral triangle	සම්පාද තිකෝණය	சமபக்க முக்கோணி
Euler's relationship	ඔයිලර්ගේ සම්බන්ධතාව	ஒயிலரின் தொடர்பு
Event	සිද්ධි	நிகழ்ச்சி
Experiment	පරීක්ෂණ	பரிசோதனை
Face	මුහුණත	முகம்
Formula	සූතුය	சூதிரம்
Information	තොරතුරු	தகவல்கள
Isosceles triangle	සමද්විපාද තිකෝණය	இருசமபக்க முக்கோணி
Length	දිග	நீளம்
Line segment	සරල රේඛා බණ්ඩය	நேர்கோட்டுத் துண்டம்
Liquid measurements	දුව මිනුම්	திரவ அளவீடுகள்
Multiple-column graph	බහු තීර පුස්තාර	கூட்டுச் சலாகை வரைபு
Obtuse - angled triangle	මහා කෝණී තිකෝණය	விரிகோண முக்கோணி
Occurrence	සිදු වීම	நிகழ்வு ∴ நேர்கை
Origin	මූල ලක්ෂය	உற்பத்தி

Pair of compasses	කවකටුව	கவராயம்
Percentage	ප්‍රතිශතය	சதவீதம்
Perimeter	පරිමිතිය	சுற்றளவு
Polygon	බහු අසුය	பல்கோணி
Prism	ප්‍රිස්මය	அரியம்
Probability	සම්භාවිතාව	நிகழ்தகவு
Pure tessellation	ශුද්ධ ටෙසලාකරණය	தூய தெசலாக்கம
Pyramid	පිරමීඩය	கூம்பகம்
Radius	අරය	ஆரை
Random event	අහඹු සිදුවීම්	எழுமாற்று நிகழ்வு
Ratio	අනුපාතය	விகிதம்
Rectangle	සෘජුකෝණාසුය	செவ்வகம்
Regular hexagon	සවිධි ෂඩසුය	ஒழுங்கான அறுகோணி
Regular polygon	සවිධි බහු-අසුය	ஒழுங்கான பல்கோணி
Right angled triangle	සෘජු කෝණී ත්‍රිකෝණය	செங்கோண முக்கோணி
Scale	පරිමාණය	அளவிடை
Scale diagram	පරිමාණ රූප	அளவிடை ப்படம்
Scalene triangle	විෂම ත්‍රිකෝණය	சமனில்பக்க முக்கோணி
Semi - pure tessellation	අර්ධ ශුද්ධ ටෙසලාකරණය	அரைத் தூய தெசலாக்கம
Shapes	හැඩතල	வடிவங்கள்
Solids	ඝන වස්තු	திண்மங்கள்
Square	සමචතුරසුය	சதுரம்
Square pyramid	සමචතුරසු පිරමීඩය	சதுரக் கூம்பகம்
Standard units	සම්මත ඒකක	நியம அலகுகள்
Straight edge	සරල දාරය	நேர் விளிம்பு
Tessellation	ටෙසලාකරණය	தெசலாக்கம்
Triangle	ත්‍රිකෝණය	முக்கோணி
Triangular prism	ත්‍රිකෝණ ප්‍රිස්මය	முக்கோண அரியம்
Unbiased	නොනැඹුරු	சமநேர்தகவுடைய
Units	ඒකක	அலகுகள்
Vertex	ශීර්ෂය	உச்சி
Volume	පරිමාව	கனவளவு
x - axis	x අක්ෂය	ஓ அச்சு
y - axis	y අක්ෂය	ல அச்சு
x - coordinate	x - බණ්ඩාංකය	ஓ ஆள்கூறு
y - coordinate	y - බණ්ඩාංකය	ல ஆள்கூறு