1. (i) Two angles of a triangle measure 47° 50' and 62° 40'.
Calculate the measure of the third angle.

(ii) Calculate the value of x.

(iii) \( bd \) is a diagonal of the parallelogram \( abcd \).
Calculate the value of \( y \).

(iv) \( pqrs \) is a square and \( \lvert qr \rvert = \sqrt{8} \).
Calculate the length of a side of the square.

(v) The area of the \( \Delta pxy \) is 12.
Find the area of the rectangle \( wxyz \).
(vi) In the circle with centre $c$ and of radius 2.5 cm,
\[ |pq| = 4 \text{ cm}. \]
Calculate $|pr|$.  

(vii) $M$ and $N$ are parallel lines.  
\[ \text{Calculate the value of } y. \]

(viii) Find the image of the point $(3, 4)$ under the axial symmetry in the $Y$ axis.

(ix) Find the image of the point $(-2, 2)$ under the translation $(0, 0) \rightarrow (7, 4)$.

(x) If $\cos \theta = 0.585$, use the book of Tables to find the value of $\sin \theta$.

2. (a) In a school of 520 pupils, 35% play games.  
How many pupils do not play games?

(b) A rectangular lawn is surrounded by a path.  
The lawn is 40 m long and 20 m wide.  
The path is 1 m wide.  
(Diagram not to scale).  
The path is covered with square paving slabs with side of length 50 cm.  
The slabs are laid parallel to the sides of the lawn.

Calculate:

(i) the area of the lawn 

(ii) the area of the path 

(iii) the number of paving slabs required to cover the path.
3. \( abcd \) is a rectangle having diagonals intersecting at \( k \). 
\( awbc \) and \( pdbc \) are parallelograms.

\[ |bc| = 4 \text{ and } |dc| = 3. \]

(i) Name any two isosceles triangles not equal in area.

(ii) Find the image of \( \triangle wbd \) under the translation \( \overline{bc} \).

(iii) Name two angles equal in measure to \( |\angle awb| \).

(iv) Calculate the area of the figure \( wbcp \).

(v) Prove that \( \triangle awb \) and \( \triangle pdc \) are congruent.

4. \( c \) is the centre of the circle where

\[ |\angle acy| = 60^\circ \text{ and } |xb| = 7. \]

(i) Find the image of \( \triangle xcb \) under the central symmetry in \( c \).

(ii) Find \( |\angle axc| \).

(iii) Name two angles equal in measure to \( |\angle acy| \).

(iv) Calculate \( |ab| \).

(v) Using angles, find the ratio:

\[
\frac{\text{area of the region } cymb}{\text{area of the circle}}
\]
5. \( b (3, 6) \) is a point, as in diagram.

Plot the point \( a (-2, 1) \).

Show that \( |ab| = \sqrt{50} \).

Find the slope of \( ab \).

Find the equation of the line \( ab \).

Calculate the coordinates of the point \( q \) where the line \( ab \) cuts the \( X \) axis.

\[
\begin{align*}
\text{Distance formula:} & \quad \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\
\text{Slope formula:} & \quad \frac{y_2 - y_1}{x_2 - x_1} \\
\text{Equation of line:} & \quad y - y_1 = m(x - x_1) \\
& \quad \text{OR} \quad y = mx + c
\end{align*}
\]

6. (a) If \( \tan \theta = 0.749 \), use the book of Tables to find the angle \( \theta \).

(b) When the angle of elevation of the sun is \( 36^\circ 50' \), an upright pole, \([rs]\), casts a shadow of length 5 m. Calculate \( |rs| \).

(c) An aeroplane, \( Q \), takes off at an angle of \( 18^\circ \) to the level ground. It travels a distance of 1000 m in 25 seconds, as shown.

Calculate

(i) the average speed of \( Q \) in m/s.

(ii) the height of \( Q \) above the ground after 25 seconds.