1. Find the equation of the straight line which passes through (2, 2) and have intercepts whose sum is 9.

2. Show that the triangle formed by the lines
   $4x - 3y - 8 = 0$, $3x - 4y + 6 = 0$, $x + y - 9 = 0$ is an isosceles triangle.

3. Find the equation of the circle when the coordinates of the points of the diameter are (3, 2) and (-7, 8).

4. Find the equation of the circle passing through the points (1, 1), (2 , -1) and (2, 3).

5. Find the equation of the circle which has its centre at (2, 3) and which passes through the intersection of the lines
   $3x - 2y - 1 = 0$, $and \ 4x + y - 27 = 0$

6. If $(h, 0)$, (a, b) and $(0, k)$ lie on a straight line , then using the area of

   the triangle formula, show that $\dfrac{a}{h} + \dfrac{b}{k} = 1$, where $h, k \neq 0$.

7. Find the equation of the line intersecting the y-axis at a distance of

   3 nits above the origin and $tan \ \theta = \dfrac{1}{2}$.

8. Find the equation of the line whose gradient is $\dfrac{3}{2}$ and which passes

   through P, where P divides the line segment joining A(-2, 6) and B(3, -4) in the ratio 2:3 internally.