# [analytic geometry]

1. Find the equation of the following lines:
   a. Line joining $A(3, -5)$ and $B(0, 6)$
   b. Line through the point $P(-3, 2)$ and parallel to the line $5x - 3y = 15$
   c. Line through the point $C(0, 5)$ and perpendicular to the line $5x - 3y = 15$
2. Given $A(-3, -1)$ and $B(3, 2)$ find
   a. Slope of $AB$
   b. Midpoint of $AB$
   c. Length of $AB$
3. State the equation of the circle with:
   a. Centre at the origin and radius of 7
   b. Centre at the origin and passing through $A(3, -4)$
   c. Centre $(0, -7)$ and passing through $(5, -7)$
4. Classify each of the points given as either inside, outside, or on the circle

$$(x - 3)^2 + (y + 4)^2 = 16$$

   a. $(3, -4)$
   b. $(1, 6)$
   c. $(7, -4)$

worksheets