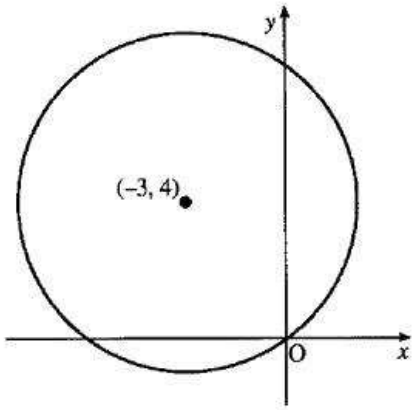
Marked Homework 9 - Circles 1

[SQA] 1. Find the equation of the circle with centre (–3, 4) and passing through the origin. **2**



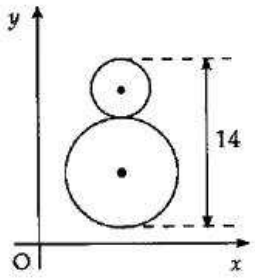
[SQA] 2. Find the equation of the circle which has $P(-2,-1)$ and $Q(4,5)$ as the end points of a diameter. **3**

[SQA] 3. Explain why the equation $x^2+y^2+2x+3y+5=0$ does **not** represent a circle. **2**

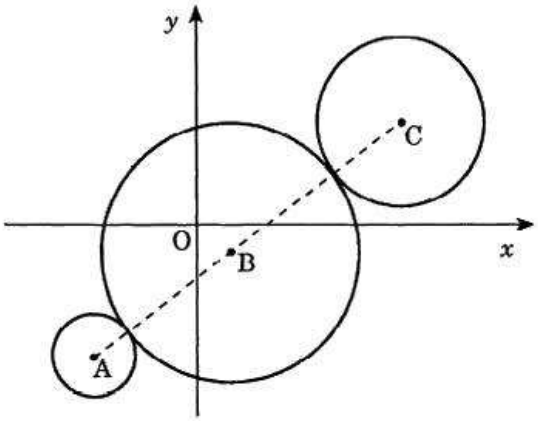
[SQA] 4. For what range of values of c does the equation $x^2+y^2-6x+4y+c=0$ represent a circle? **3**

[SQA] 5. A bakery firm makes gingerbread men each 14cm high with a circular "head" and "body".

The equation of the "body" is $x^2+y^2 10x-12y+45=0$ and the line of centres is parallel to the y-axis. Find the equation of the "head". **5**



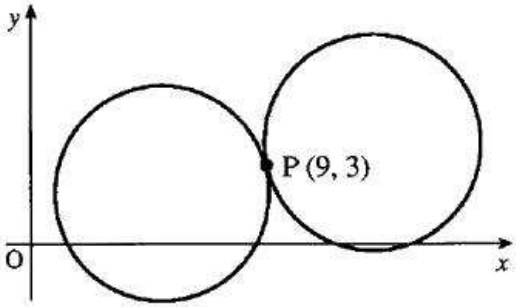
[SQA] 6. When newspapers were printed by lithograph, the newsprint had to run over three rollers, illustrated in the diagram by three circles. The centres A, B and C of the three circles are collinear.



The equations of the circumferences of the outer circles are
$(x+12)^2+(y+15)^2=25$ and $(x-24)^2+(y-12)^2=100$.
Find the equation of the central circle. **(8)**

[SQA] 7. Two identical circles touch at the point P (9, 3) as shown in the diagram. One of the circles has equation
$x^2+y^2-10x-4y+12=0$.

Find the equation of the other circle. 5



[END OF QUESTIONS]