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CIRCLES The circle Passing through origin ( 9) 010 ( x, ) @ Point on citle Point ( Point ( Point ( Point ()  $a(x^{2}y^{2}) + 2gx + 2fy + c = 0$ =)  $y^{2}+y^{2}+2y_{a}^{2}+2y_{a$ 

1) Find the centre and radius of each of the circles whose equations are given  
below: 
$$\sqrt{1 + m^2}(x^2 + y^2) - 2cx - 2mcy = 0$$
  
 $3f = -\frac{LC}{\sqrt{1 + m^2}}$   
 $f = -\frac{LC}{\sqrt{$ 

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CIRCLES  

$$\chi = \sqrt{\frac{1}{5} + 1^{1}} = \sqrt{\frac{5}{5} = \sqrt{10}}$$
  
The vequited circle equation is  $(x - h)^{2} + (y - x)^{2} = y^{2}$   
 $(x - 5)^{2} + (y - 1)^{2} = (\sqrt{20})^{2}$   
 $x^{2} + 25 - 10x + y^{2} + 1 - 2y = 20$   
 $x^{2} + y^{2} - 10x - 2y + 26 - 20 = 20$   
 $y^{2} + y^{2} - 10x - 2y + 26 - 20 = 20$ 



**3)** Find the equation of circle passing through each of the following three points (3, 4), (3, 2), (1, 4)

Sol:
 Given poinds 
$$(3, 4)$$
  $(3, 2)$   $(1, 4)$ 

 The derived civite equation is  $x^2 + y^2 + 2gx + 2fy + c = 0$ 
 $(1)$ 

 (1)
 is passing Andough  $(3, 14)$ 

 (2)
  $(1)$ 

 (3)
  $(2)$ 

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 (5)
  $(3, 14)$ 

 (6)
  $(1, 14)$ 

 (6)
  $(1, 14)$ 

Substitute 9, f, c values in 1) we set.  

$$x^{2}+y^{2}+\partial x(-2)+2j(-3)+11=0$$
.  
 $(x^{2}+y^{2}-4x-6j+11=0)$   
It is required circle cquatter

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5) Show that the following four points in each of the following are  
concyclic and the equation of the circled on which they lie. (1, 1), (-6, 0),  
(-2, 2), (-2, -8)  
Sol: 
$$(1, 1)$$
  $(-6, 0)$   $(-2, 2)$ ,  $(-2, -8)$   
Let the Circle equation is  $x^2 + y^2 + 2gx + 2fy + c = 0$   $-1$   
(1) Is fassing Arrlough  $(1, 1)$   
 $1+1 + 2g+2f + c = 0$   
 $2g+2f + c + 2 = 0$  (2)  
 $36 + 0 - 12g + 0 + c = 0$   
 $-12g + c + 36 = 0$ 

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(i) is passing Andough (-2,2) 4+4-45+44+c=0 -45+44+c=0 -45+44+c+8=0 -45+44+c+8=0 -45+24+c+8=0 -45+24+c+8=0 -45+24+c+8=0 -45+24+c+8=0 -123+0-4c+36=0 -123+0-4c+36=0 -123+24-24-34=0 -123+24-24-34=0 -123+24-24-34=0 -123+24-34=0-

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Solve 3 W4  $-12j \neq 0 \neq d \neq 36 = 0$  $-49 \neq 4f \neq c \neq 8 = 0$ -89-41+28=0 -4(29+7-7)=0 29+8-7=0-6) Solve (3) k (3) 109 - 20 =0

19=21 Substitute 9 m 6 4+1-2=0 1=3rubshibute 97 m3-12(2)+ cf 36=0 C = -12

CIRCLES  
Subshitute 
$$j_{1}f_{1} \subset m$$
 (1)  
 $1^{2}+y^{2}+\partial x(2)+\frac{1}{2}y(3)-12=0$   
 $1^{2}+y^{2}+4x+6y-12=0$   
But (1) is fragons Andough (-2,-8)  
 $4+64-8-48-12=0$   
 $68-68=0$   
 $0=0$ 

**G**) If (2, 0), (0, 1), (4, 5) and (0, c) are concyclic then find c.  
**Sol:** Griven Points (2, 0) (0, 1) (4, 5) and (0, c)  
let the equation of civile 
$$\frac{1}{2}+\frac{1}{$$

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Le get a Q.E Solve mis Q.E We get C Value **Rizee** 

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$$(1) is firsting fundows h (6.5) 
36+25+125+10f + C=0 
123+10f + C+61=0 - (3) 
Solve (2) b(3) 
123+10f # d+61=0 
83 + 2f+fc + 17=0 
4g + 8f + 4 4=0 - (7) 
(1) is firsting fundows h (6.5) 
123+10f # d+61=0 
83 + 2f+fc + 17=0 
43 + 8f - 44 = 0 
-5f-20=0 
-5f=20 
(1) is firsting fundows h (6.5) 
123+10f # d+61=0 
(1) is firsting fundows h (6.5) 
123+10f # d+61=0 
(1) is firsting fundows h (6.5) 
(2) is firsting fundows h (6.5) 
(3) is firsting fundows h (6.5) 
(4) is firsting fundows h (6.5) 
(5) is firsting fundows h (6.5) 
(5) is firsting fundows h (6.5) 
(5) is firsting fundows h (6.5)$$

## $\mathbf{\Lambda}$ CIRCLES Substitute 7 in (5) C=7, Substitute 9, 1, c in 1 49+8(-4)+44=0 49-32-+44=0 $x^{2}+y^{2}+2x(-2)+2y(-4)+7=0$ 4j=-8 x2+y2-42-8J+7=0 15=-21 1. It is required Circle equation. Substitute 9, 7 m can (2) 8(-2) + 2(-4) + C + 17 = 0-16-8+C+17=0. C-24-17

# **THANK YOU**

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