Geometry Name Key

WS PC #2 Review Unit 10

Use the information provided to write the standard form equation of each circle. $(x-h)^2+(y-k)^2=r^2$

1) Center: $(-12, 7)$
Radius: 3

$(x+12)^2+(y-7)^2=9$

2) Center: $(5, -9)$
Radius: 1

$(x-5)^2+(y+9)^2=1$

3) Center: $(16, 2)$
Radius: $\sqrt{5}$

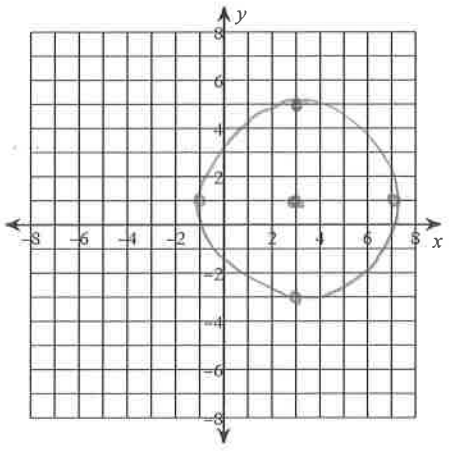
$(x-16)^2+(y-2)^2=5$

4) Center: $(-9, -6)$
Radius: 9

$(x+9)^2+(y+6)^2=81$

Identify the center and radius of each. Then sketch the graph.

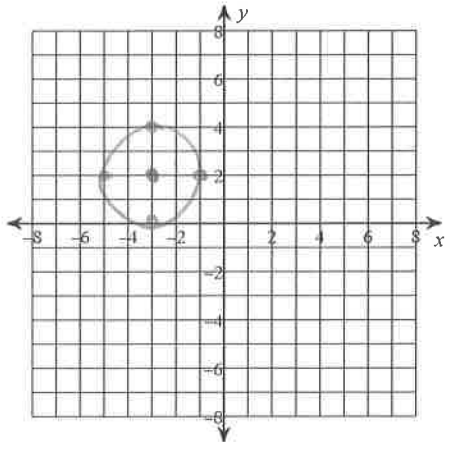
5) $(x-3)^2+(y-1)^2=16$



center $(3,1)$

$r=4$

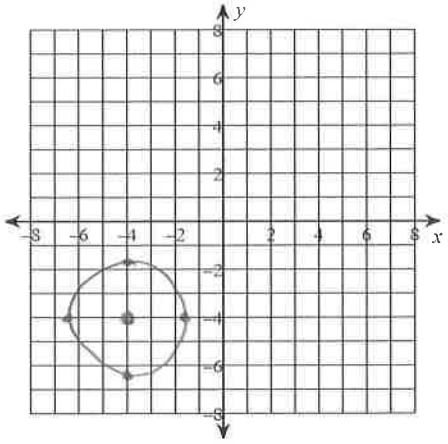
6) $(x+3)^2+(y-2)^2=9$



center $(-3,2)$

$r=2$

7) $x^2 + y^2 + 8x + 8y + 27 = 0$



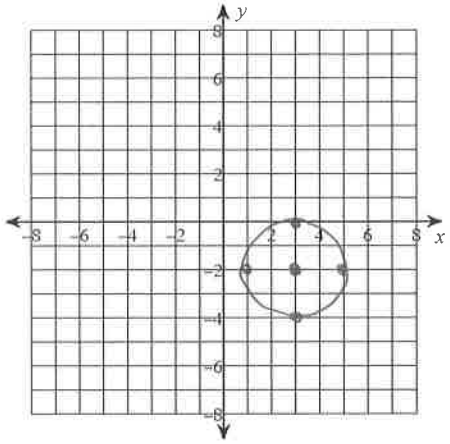
$x^2 + 8x + \underline{16} + y^2 + 8y + \underline{16} = -27 + \underline{16} + \underline{16}$

$(x+4)^2 + (y+4)^2 = 5$

Center $(-4, -4)$

$r = \sqrt{5}$

8) $x^2 + y^2 - 6x + 4y + 9 = 0$



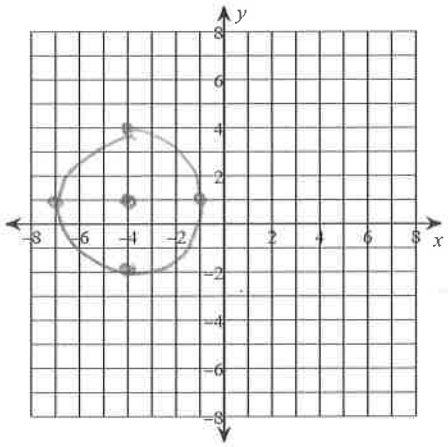
$x^2 - 6x + \underline{9} + y^2 + 4y + \underline{4} = -9 + \underline{9} + \underline{4}$

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

Center $(3, -2)$

$r = 2$

9) $x^2 + y^2 + 8x - 2y + 8 = 0$



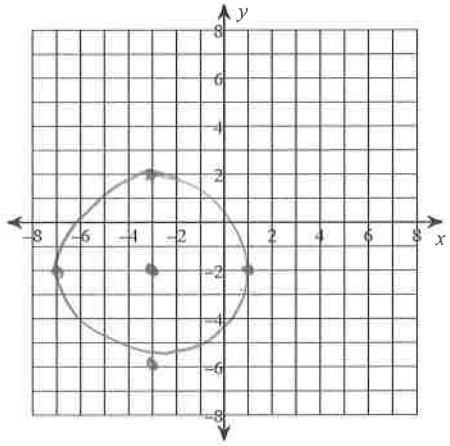
$x^2 + 8x + \underline{16} + y^2 - 2y + \underline{1} = -8 + \underline{16} + \underline{1}$

$(x+4)^2 + (y-1)^2 = 9$

Center $(-4, 1)$

$r = 3$

10) $x^2 + y^2 + 6x + 4y - 3 = 0$



$x^2 + 6x + \underline{9} + y^2 + 4y + \underline{4} = 3 + \underline{9} + \underline{4}$

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

Center $(-3, -2)$

$r = 4$

Write the general form equation of each circle.

11) $x^2 + y^2 - 4x + 8y - 80 = 0$

$x^2-4x+4+y^2+8y+16=80+4+16$

$(x-2)^2+(y+4)^2=100$

12) $x^2 + y^2 + 18x - 22y + 197 = 0$

$x^2+18x+81+y^2-22x+121=-197+81+121$

$(x+9)^2+(y-11)^2=5$

13) $x^2 + y^2 + 32x + 20y + 349 = 0$

$x^2+32x+256+y^2+20y+100=-349+256+100$

$(x+16)^2+(y+10)^2=7$

14) $x^2 + y^2 - 12x - 6y - 19 = 0$

$x^2-12x+36+y^2-6y+9=19+36+9$

$(x-6)^2+(y-3)^2=64$

Solve each equation by factoring.

15) $x^2 - 3x = 40$

$x^2-3x-40=0$

$(x-8)(x+5)=0$

$x-8=0 \quad x+5=0$

$x=8,-5$

16) $5b^2 + 28 = 27b$

$5b^2-27b+28=0$

140: $-7 \cdot -20$

$(5b^2-7b)(-20b+28)=0$

$b(5b-7)-4(5b-7)=0$

$(b-4)(5b-7)=0 \quad b-4=0 \quad 5b-7=0$

$b=4,\frac{7}{5}$

17) $6k^2 = 23k + 35$

$6k^2-23k-35=0$

-210: $7 \cdot -30$

$(6k^2+7k)(-30k-35)=0$

$k(6k+7)-5(6k+7)=0$

$(k-5)(6k+7)=0$

$k-5=0 \quad 6k+7=0$

$k=5,-\frac{7}{6}$

18) $21k^2 = 153k + 120$

$21k^2-153k-120=0$

$3(7k^2-51k-40)=0$

-280: $5 \cdot -56$

$(7k^2+5k)(-56k-40)=0$

$k(7k+5)-8(7k+5)=0$

$(k-8)(7k+5)=0$

$k-8=0 \quad 7k+5=0$

$k=8,-\frac{5}{7}$

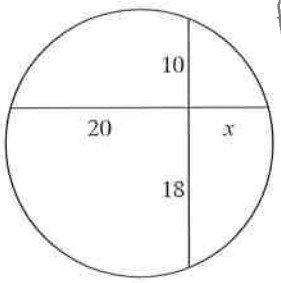
Geometry Name _____

WS PC #2 Review Unit 10

P = Part
O = Outside
W = Whole

Solve for x. Assume that lines which appear tangent are tangent.

1)



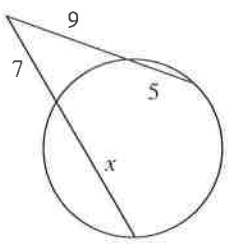
$P \cdot P = P \cdot P$

$18 \cdot 10 = 20 \cdot x$

$180 = 20x$

$\boxed{x = 9}$

2)



$O \cdot W = O \cdot W$

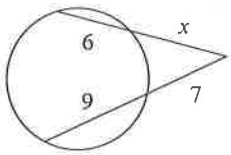
$9 \cdot 14 = 7(7+x)$

$126 = 49 + 7x$

$77 = 7x$

$\boxed{x = 11}$

3)



$O \cdot W = O \cdot W$

$x(x+6) = 7 \cdot 16$

$x^2 + 6x = 112$

$x^2 + 6x - 112 = 0$

$(x^2 - 8x) + (14x - 112) = 0$

$x(x-8) + 14(x-8) = 0$

$(x+14)(x-8) = 0$

-112 | -8 | 14

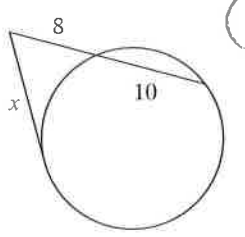
$x + 14 = 0$

$x - 8 = 0$

$x = -14, 8$

$\boxed{x = 8}$

4)



$(\tan)^2 = O \cdot W$

$x^2 = 8 \cdot 18$

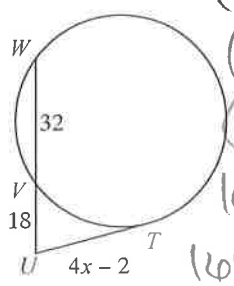
$x^2 = 144$

$x = \pm 12$

$\boxed{x = 12}$

Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

5) Find TU



$(\tan)^2 = O \cdot W$

$(4x-2)^2 = 18 \cdot 50$

$(4x-2)(4x-2)$

$16x^2 - 16x + 4 = 900$

$16x^2 - 16x - 896 = 0$

$16(x^2 - x - 56) = 0$

$16(x-8)(x+7) = 0$

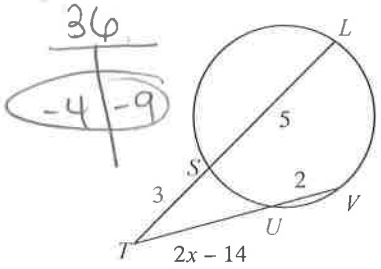
$x = 8, -7$

$x = 8$

$4(8) - 2$

$\boxed{TU = 30}$

6) Find UT



$O \cdot W = O \cdot W$

$2x - 14(2x - 14 + 2) = 3 \cdot 8$

$(2x-14)(2x-12) = 24$

$4x^2 - 52x + 168 = 24$

$4x^2 - 52x + 144 = 0$

$4(x^2 - 13x + 36) = 0$

$4(x-4)(x-9) = 0$

$x = 4, 9$

36 | -4 | -9

$2(4) - 14 = -6$

$2(9) - 14 = 4$

$\boxed{UT = 4}$