STUDY GUIDE Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_ Period\_\_\_

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| Equation of a circle:$$\left(x-h\right)^{2}+\left(y-k\right)^{2}=r^{2}$$Where (h,k) is the center and r is the radius.**Ex**: Write an equation for a circle with a radius of 8 and a center at (3,-2)Answer:$$(x-3)^{2}+(y+2)^{2}=64$$ | 1. What is the equation of the circle to the right?2. what are the center and the radius of the following circle: $(x+5)^{2}+(y+2)^{2}=9$? |
| Completing the square: | Use completing the square to put the following equations of a circle in standard form: |
|  | 4x=3(8) simplify4x=24 divide by 4X=6 | 1. 2.   |
| outside ∙ whole = outside ∙ whole | $4\left(x+4\right)=6\left(6\right)$ simplify$4x+16=36$ subtract 16$4x=20$ divide by 4$x=5$1 | 1. 2.  |
| Image result for central angleImage result for inscribed angleCentral angle = intercepted arc Inscribed angle = ½ (intercepted arc)  X=80 X= 50 | 1. 2.  |
| $$x=\frac{1}{2}\left(120\right) x=60$$ |  |
| ARC LENGTH: $L=2πr(\frac{n^{o}}{360^{o}})$SECTOR AREA: $A= πr^{2}(\frac{x^{o}}{360^{o}})$ | Find the arc length $L=2π11(\frac{315^{o}}{360^{o}})$L = 60.5 feetFind the sector area$$A= π16^{2}\left(\frac{240^{o}}{360^{o}}\right)$$ A = 536.2 | arc length:Sector area: You are eating a doughnut. The missing circle in the middle has a radius of 0.2 inches. The entire doughnut has a radius of two inches. Your first bite takes 70 degrees out of the circle. What is the remaining area of the doughnut? |
|  (big arc) – (small arc) = 2(angle)$x-100=2(80)$ simplify $80-20=2x$ simplify$x-100=160$ add $60=2x$ divide $x=260$ $x=30$ $100-30=2x$ simplify$ 70=2x$ divide$$ x=35$$  |  |
| OR $arc+arc=angle+angle$$170+70=x+x$ simplify$240=2x$ divide$$x=120$$ |  |
| A circumscribed angles and their arcs are always supplementary.$x+125=180$ subtract$$x=55$$ | Find angle R if angle O is 70 degrees. |