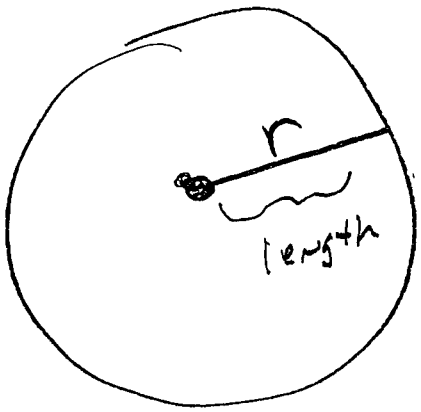
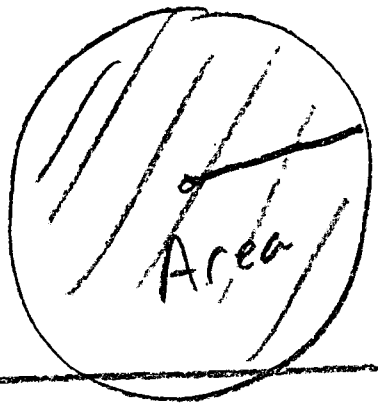
Geometry — TUESDAY 2-5-13 — CLASS NOTES



Circumference

$C = 2\pi r$

1D

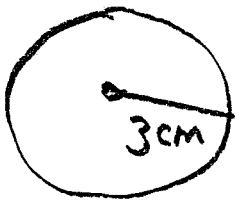


$A_{\odot} = \pi r^2$

2D

(EX) Find C AND A

$\pi = 3.1416$



$C = 2\pi r$

$= 2(3.1416)(3)$

$\times 6$

$= 18.8496$

$C = 18.8\text{ cm}$

$A = \pi r^2$

$= (3.1416)(3)^2$

$\times 9$

28.2744

$A = 28.3\text{ cm}^2$

Equation of Each Circle

① $\odot A$ $A(3,-5)$ $r=12$

h, k

* $\boxed{(x-h)^2+(y-k)^2=r^2}$

$\boxed{(x-3)^2+(y+5)^2=144}$

CK $(-9,-5)$

$(-9-3)^2+(-5+5)^2 \stackrel{?}{=} 144$

$144 + 0 \stackrel{?}{=} 144$ ✓

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② $\odot B$, $B(-4,0)$ $r=7$

$\boxed{(x+4)^2+y^2=49}$

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① ⊙A A(3, −5) r = 12

ALL $(x-h)^2+(y-k)^2=r^2$

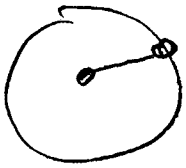
C(h, k) $r=\sqrt{r^2}$

$(x-3)^2+(y+5)^2=144$

② ⊙B, B(−4, 0), r = 7

$(x+4)^2+y^2=49$

③ ⊙M, through (2, 0), M(4, 0) ✱ h, k



(2, 0), (4, 0)

$(0-0)^2+(4-2)^2=r^2$

✱ $4=r^2$

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

(2) $\odot B$, $B(-4,0)$ $r = 7$

$$(x-h)^2 + (y-k)^2 = r^2$$

* $(x+4)^2 + y^2 = 49$ *

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(3) $\odot M$ through $(2,0)$, Center $M(4,0)$

$(2,0), (4,0) \Rightarrow r^2 = (0)^2 + (4-2)^2$

$r^2 = 4$ *

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

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(4) $\odot N$, through $(2,-2)$, $N(\underset{h}{-1}, \underset{k}{2})$

$(2,-2), (-1,2)$ $r^2 = (4)^2 + (-3)^2$

$r^2 = 16 + 9$

$r^2 = 25$

* $(x+1)^2 + (y-2)^2 = 25$

③ ⊙M, through (2,0), M(4,0) (h, k)

(2,0), (4,0)

$(0)^2 + (4-2)^2 = r^2$

$4 = r^2$

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

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④ ⊙N, through (2,-2), N(-1,2) (h, k)

(2,-2), (-1,2)

$r^2 = (2+2)^2 + (-1-2)^2$

$r^2 = 16 + 9 = 25$

$(x+1)^2 + (y-2)^2 = 25$

④ ⊙N, through $(2,-2)$ Center $N(-1,2)$
h, k

$(2,-2), (-1,2)$

$(2+2)^2 + (-1-2)^2 = r^2$

$16 + 9 = r^2$

$25 = r^2$

$\boxed{(x+1)^2 + (y-2)^2 = 25}$

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⑤ graph $(x-3)^2 + (y-3)^2 = 4$

Center $(3,3)$, $r = 2$

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⑥ $(x-1)^2 + (y+2)^2 = 9$

$C(1,-2)$, $r = 3$

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⑦ $(x+3)^2 + (y+4)^2 = 1$

$C(-3,-4)$ $r = 1$

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⑧ $(x-3)^2 + (y+4)^2 = 16$

$C(3,-4)$ $r = 4$

Worksheet Practice

(4) $(x-3)^2 + (y+4)^2 = 7$ (r^2)

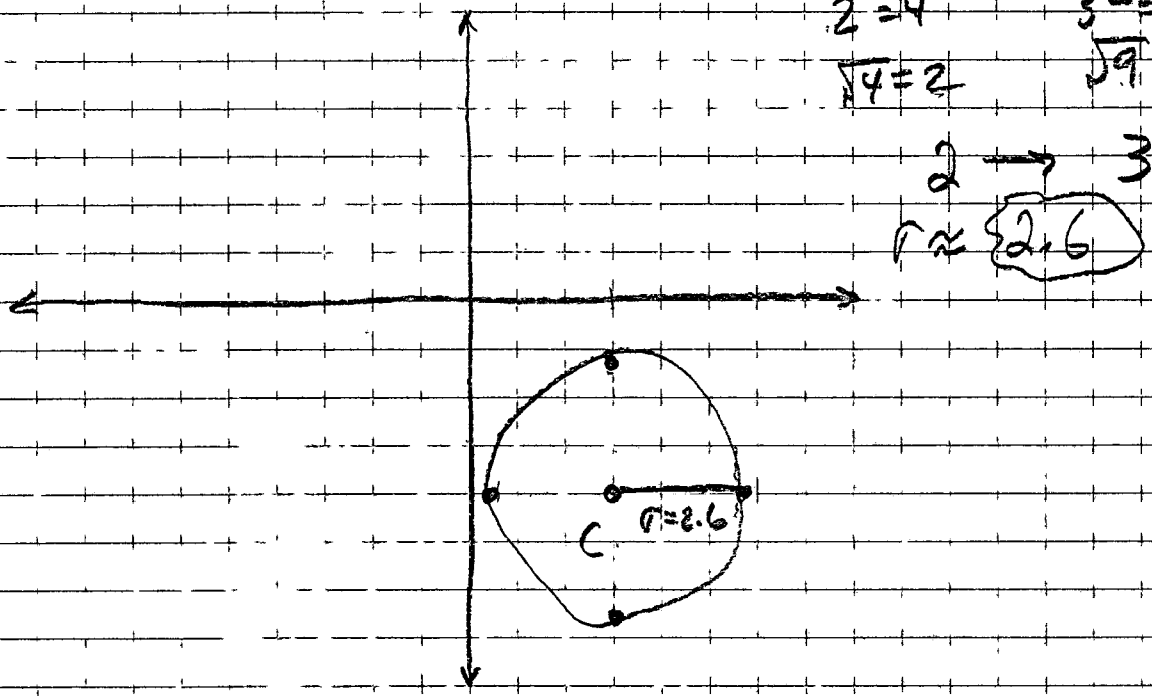
$C(3, -4)$ $r = \sqrt{7}$

$2^2 = 4$ $3^2 = 9$

$\sqrt{4} = 2$ $\sqrt{9} = 3$

$2 \rightarrow 3$

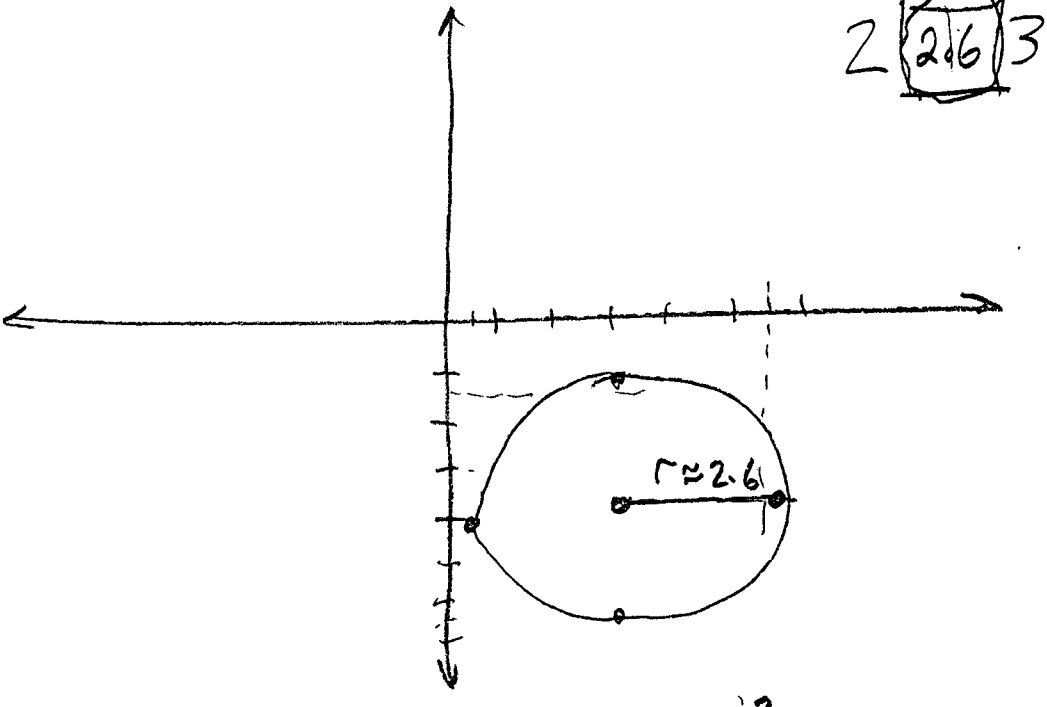
$r \approx \{2.6\}$



(4) $(x-3)^2+(y+4)^2=7$

Center $(3,-4)$, $r=\sqrt{7}$

$2\boxed{2.6}3$



(14) $C(-6,11)$ $r=(3\sqrt{2})^2$

$(x+6)^2+(y-11)^2=18$

(13) $C\left(-\frac{5}{2},\frac{21}{2}\right)$ $r=3$

$\left(x+\frac{5}{2}\right)^2+\left(y-\frac{21}{2}\right)^2=9$

(11) EQ Circle? $C(5,-14)$ $r=\sqrt{2}$

$$(x-5)^2+(y+14)^2=2$$