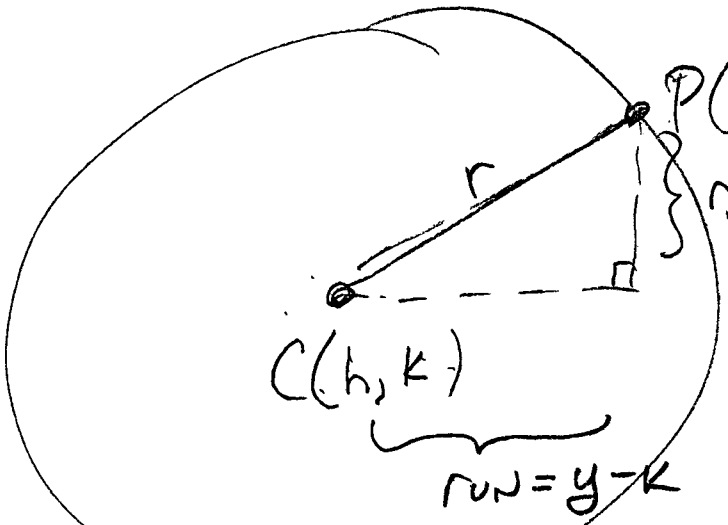
Geometry TUES. 5-14-13 Class Notes



DISTANCE FORMULA $\Rightarrow d^2 = run^2 + rise^2$

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

Eq of circle

Eg. of a circle:

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

Center (h, k) $\quad$ $(\text{radius})^2$

(Ex) $r = \sqrt{6}$

(Ex) $C(0,0) \Rightarrow x^2 + y^2 = r^2$

$\Rightarrow$ WS Practice: $(x-\sqrt{183})^2 + (y-\sqrt{142})^2 = 9$

① $(x-\sqrt{183})^2 + (y-\sqrt{142})^2 = 9$

$C(x, y) = C(\sqrt{183}, \sqrt{142})$ $\quad$ $r = \sqrt{9} = 3$

13.5h, 11.5h

~~x, y~~

③ $(x+11)^2 + (y-\frac{17}{2})^2 = 9$

$C(-11, \frac{17}{2})$	$r = 3$

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⑤ Center $(\frac{-11}{2}, \frac{5}{2})$ $r = 6$

h, k

$$(x+\tfrac{11}{2})^2 + (y-\tfrac{5}{2})^2 = 36$$

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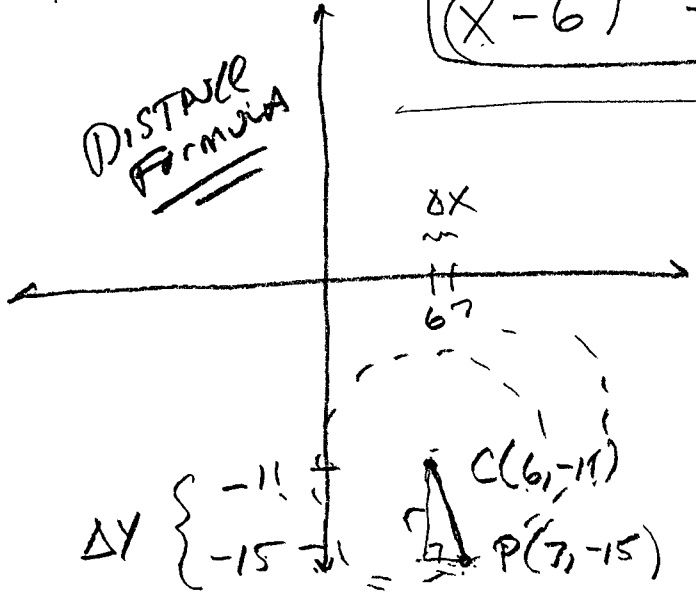
⑦ $C(6,-11)$, Point on Circle $(7,-15)$

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

$$(x-6)^2 + (y+11)^2 = 17$$

DISTANCE FORMULA



$(-15+11)^2 + (7-6)^2 = r^2$

rise run

$16 + 1 = r^2$

$17 = r^2$

ALT ⇒ use $(7,-15)$ as x, y

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

$(7-6)^2 + (-15+11)^2 = 17$

(11) From graph

$C(-2,4)$ $r=3$

* $\boxed{(x+2)^2 + (y-4)^2 = 9}$

(EX) $P(1,4)$

$(1+2)^2 + (4-4)^2 = 9$ ✓

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(13) $C = ?$ $r = 9\,m$

$\boxed{C = 2\pi r}$

$C = 2\pi(9)$

$\boxed{C = 18\pi\,m}$

(17) $C = ?$ nearest tenth, $\pi \approx \frac{22}{7}$

$r = 7.4$ mi

$C = 2\pi r = 2\left(\frac{22}{7}\right)7.4$

$= \frac{44}{7} \cdot \frac{7.4}{1} =$

$= \frac{325.6}{7}$ Go to hundredths

$$\begin{array}{r} 46.51 \\ 7\overline{)325.600} \\ -28 \\ \hline 45 \\ -42 \\ \hline 36 \\ -35 \\ \hline 10 \end{array}$$

$\therefore$ $C = 46.5$ mi ✓

$$\begin{array}{r} 44 \\ \times\ 7.4 \\ \hline 176 \\ 30^{2}8 \\ \hline 325.6 \end{array}$$