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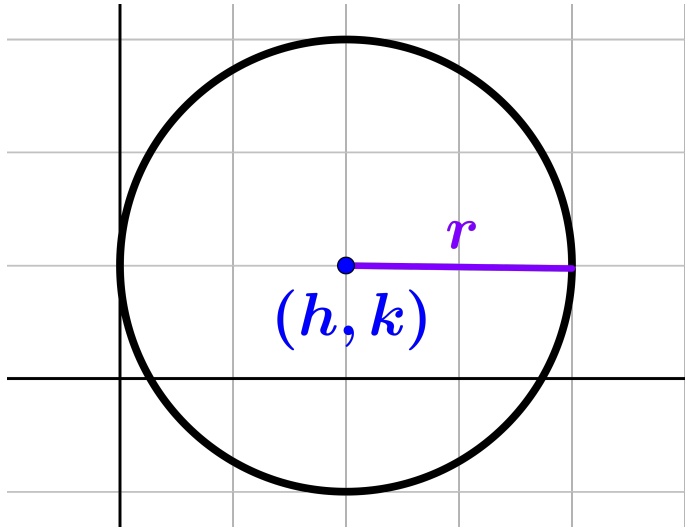
Can we find a similar equation for the circle of radius $r$ and center $(h, k)$



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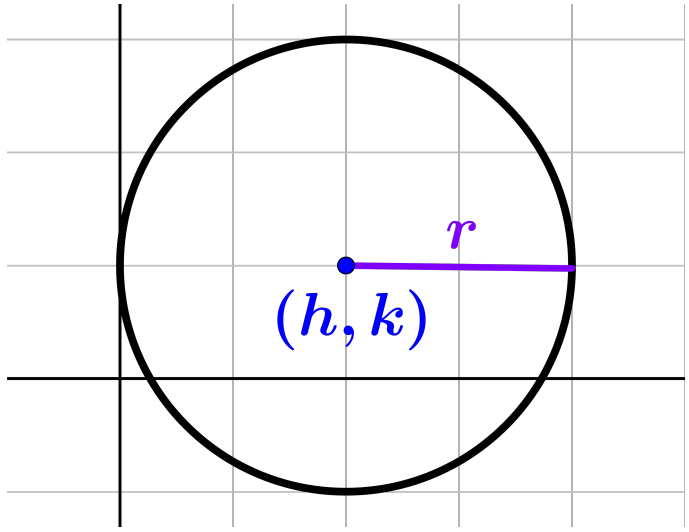


Recall that our definition of a circle is all points $(x, y)$ so that the distance between $(x, y)$ and $(h, k)$ is $r$

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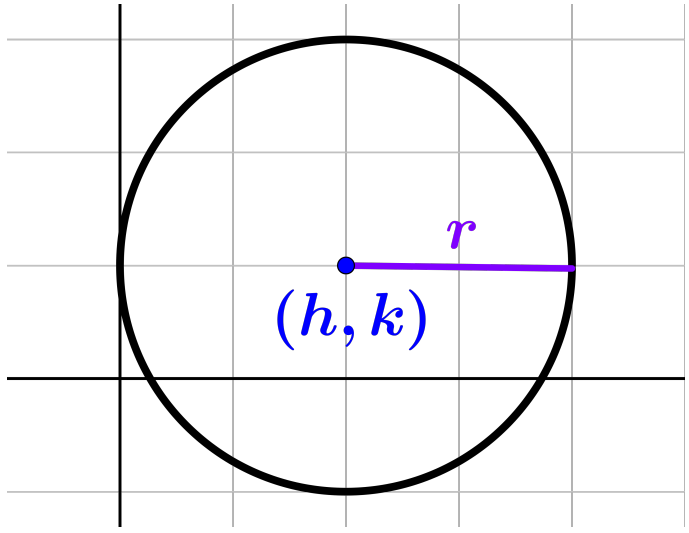


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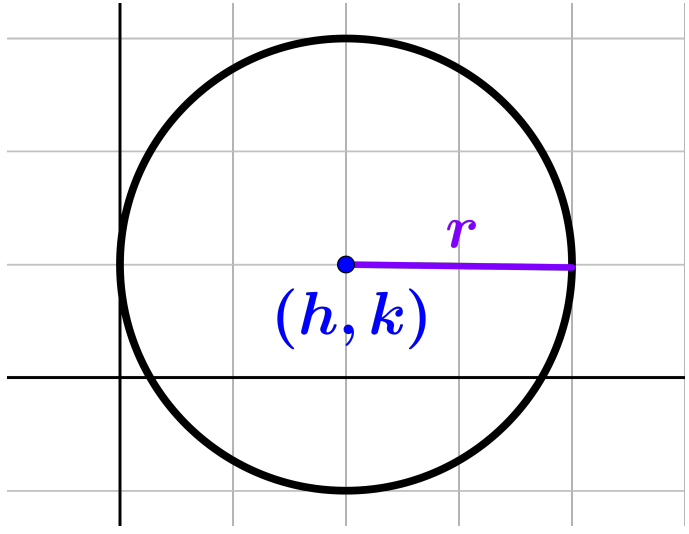


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$$distance^2 = (x - h)^2 + (y - k)^2$$

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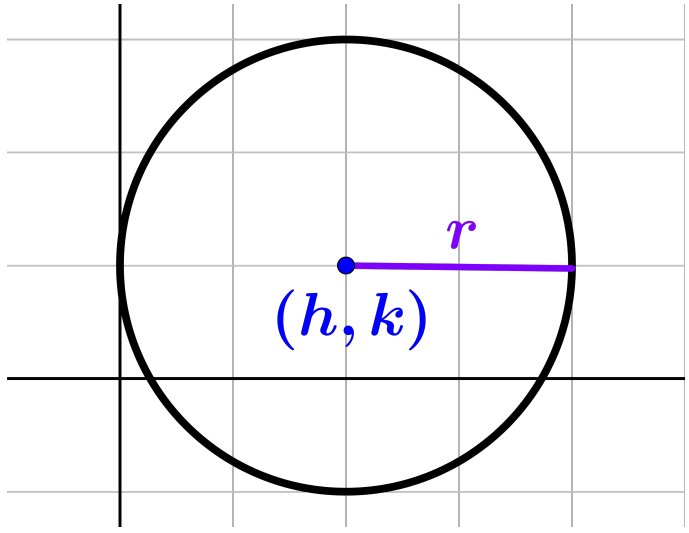


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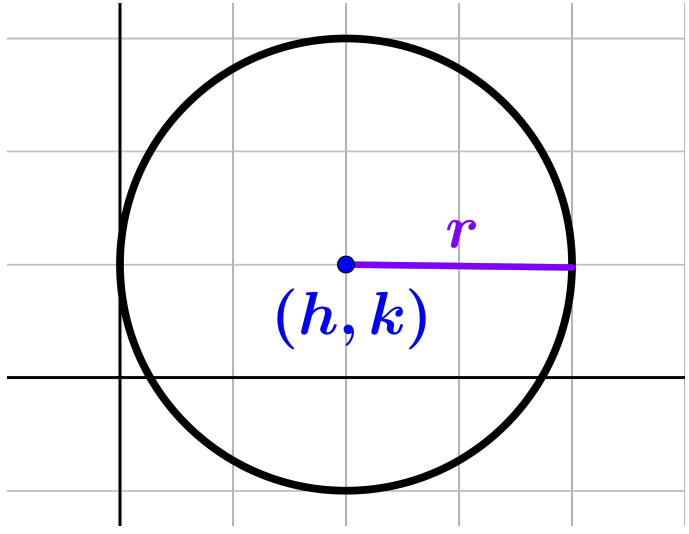


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**Conclusion:** The circle with radius $r$ and center $(h, k)$ is all the points $(x, y)$ so that:

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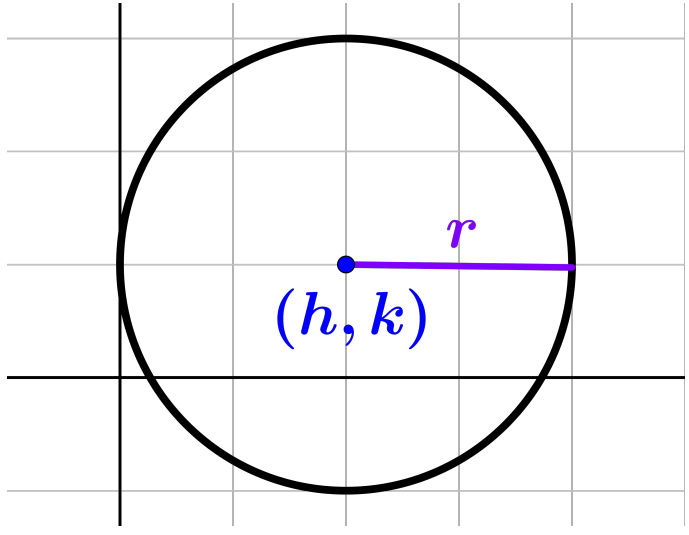


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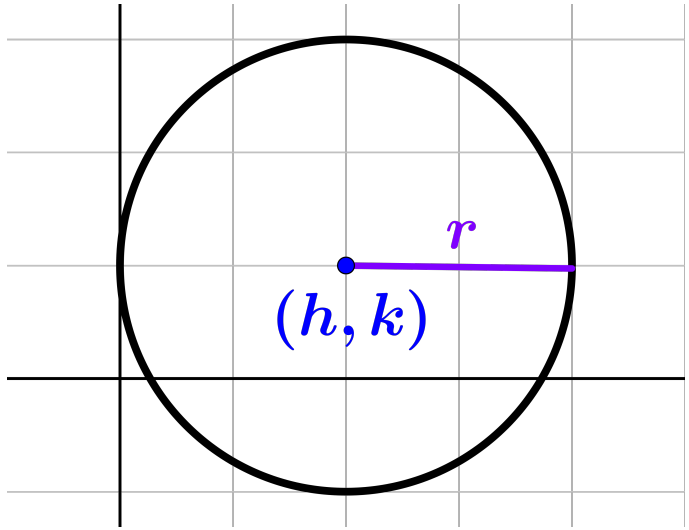


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$$r = \sqrt{(x - h)^2 + (y - k)^2}$$