

## Quiz 5

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**Find the center and the radius of the circle given by the equation**

$$x^2 - 6x + y^2 + 4y = 12.$$

Solution. Complete the two squares by adding  $9 + 4 = 13$  to both sides to obtain

$$x^2 - 6x + 9 + y^2 + 4y + 4 = 12 + 9 + 4$$

which is equivalent to

$$(x - 3)^2 + (y + 2)^2 = 25,$$

so the center is  $(3, -2)$  and the radius is 5.