Princess Vulnavia presents … Cloud 9; Revision Raindrops

The Touching Point of Two Circles

Raindrop 10b

The equations of two circles are: $x^2 + y^2 - 4x - 8y + 20 = r^2$

and $x^2 + y^2 - 20x + 4y + 68 = 0$

Find the possible values of r so that the two circles touch at only one point.

Give the coordinates of the touching point in each case and sketch the circles for each case.

The answer follows on the next page …

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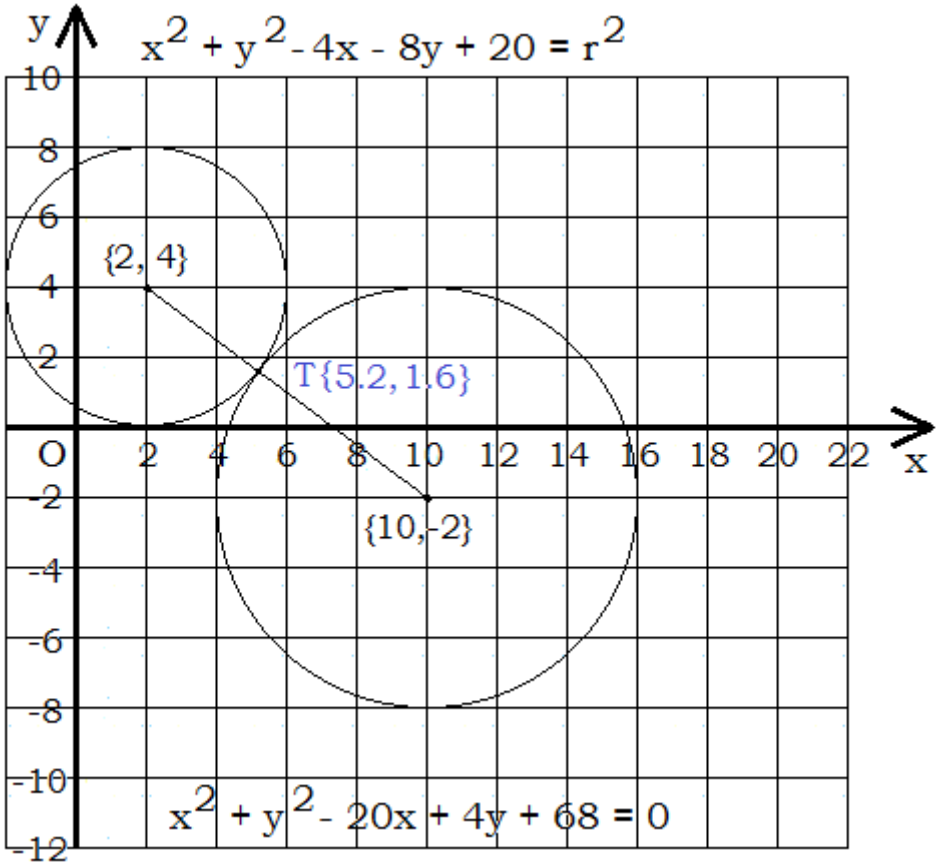
Answer

In the case where r = 4, the coordinates of the touching point T are: { 5.2 , 1.6 }



A second option follows on the next page …

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Raindrop 10b Answer: Continued …

In the case where r = 16, the coordinates of the touching point T are: { 14.8 , -5.6 }