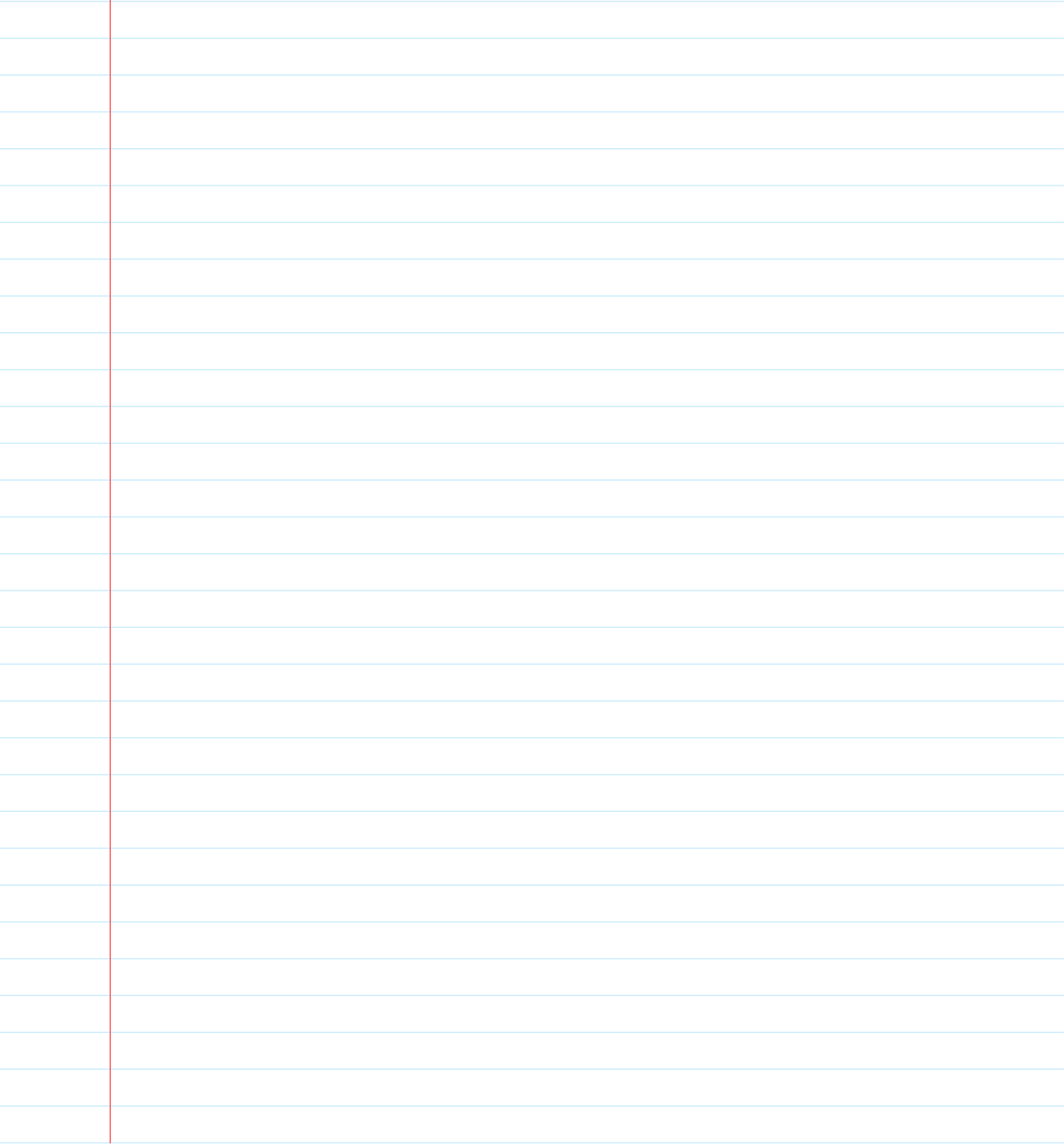


13.6 side 2

Monday, May 8, 2017 7:50 AM



Are the following points on, inside, or outside the circle $x^2 + y^2 = 16$?

9. $(1, -\sqrt{3})$?
 $1^2 + (-\sqrt{3})^2 = 16$
 $1 + 3 = 4 < 16$
 Inside

Fill in the blank:

12. $(x+3)^2 = x^2 + 6x + \underline{9}$

10. $(-\sqrt{2}, 2\sqrt{2})$
 $(-\sqrt{2})^2 + (2\sqrt{2})^2 = 16$
 $2 + 4 \cdot 2 = 16$
 $2 + 8 = 10 < 16$
 inside

13. $(x-1)^2 = x^2 - 2x + \underline{1}$

11. $(\sqrt{5}, 2\sqrt{3})$
 $(\sqrt{5})^2 + (2\sqrt{3})^2 = 16$
 $5 + 4 \cdot 3 = 16$
 $17 > 16$
 outside

14. $(x-5)^2 = x^2 - 10x + \underline{25}$

Write the equation of the circle in standard form.

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

15. $x^2 + 8x + y^2 - 10y = 100$

$$x^2 + 8x + \underline{16} + y^2 - 10y + \underline{25} = 100 + 16 + 25$$

$$(x+4)^2 + (y-5)^2 = 141$$

16. $x^2 - 12x + y^2 + 2y = 5$

$$x^2 - 12x + \underline{36} + y^2 + 2y + \underline{1} = 5 + 36 + 1$$

$$(x-6)^2 + (y+1)^2 = 42$$

17. $2x^2 + 8x + 2y^2 - 20y = -4$

$$x^2 + 4x + y^2 - 10y = -2$$

$$x^2 + 4x + \underline{4} + y^2 - 10y + \underline{25} = -2 + 4 + 25$$

$$(x+2)^2 + (y-5)^2 = 27$$

18. $-3x^2 - 3y^2 = 6x - 12y + 36$

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

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

$$x^2 + 2x + 1 + y^2 - 4y + 4 = -12 + 1 + 4$$

$$(x+1)^2 + (y-2)^2 = -7$$

There is No Such circle. ☹