

Kiss Me Twice

McClain
Princess

Consider the two relations:

$$y = x - 4$$

$$(x - 4)^2 + (y - 4)^2 = 16$$

A

There exists two intersection points of these relations.

Using a strategy of your choice, determine the intersection points.

Answer cannot be determined

Justify your reasoning.

$$y = x - 4 \quad (x - 4)^2 + (x - 4)^2 = 16$$

$$16 = (x - 4)(x - 4) + (y - 4)(x - 4)$$

$$16 = (x - 4)^2 + (x - 4 - 4)^2$$

$$16 = (x - 4)^2 + (x - 8)^2$$

$$16 = (x - 4)(x - 4) + (x - 8)(x - 8)$$

$$16 = x^2 - 4x - 4x + 16 + x^2 - 8x - 8x + 64$$

$$2x^2 - 24x + 80$$

$$\begin{matrix} a & b & c \end{matrix}$$

~~$$-b \pm \sqrt{b^2 - 4ac}$$~~

$$-b \pm \sqrt{b^2 - 4ac}$$

~~$$+24 \pm \sqrt{576 - 640}$$~~

$$+24 \pm \sqrt{576 - 640}$$

$$24 \pm \sqrt{-64}$$

4

Cannot be done
because the square
root is a negative

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B

Consider the two relations:

$y = x - 4$ (line)

$(x - 4)^2 + (y - 4)^2 = 16$ (circle)
 (4,4) $r = 4$

There exists two intersection points of these relations.

Using a strategy of your choice, determine the intersection points.

Answer It intersects at (8, 4) on the Graph

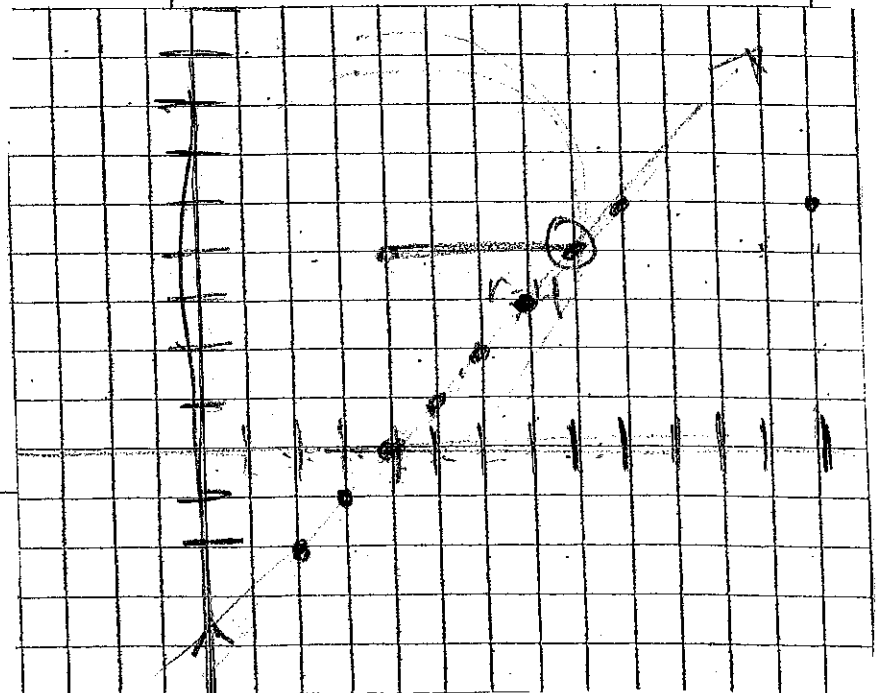
Justify your reasoning.

$y = x - 4$

4	0
3	-1
2	-2
1	-3
0	-4
-1	-5
-2	-6
-3	-7

$x = 4$

9	5
8	4
7	3
6	2
5	1



Juan Madden

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C

Consider the two relations:

$$y = x - 4$$

$$(x - 4)^2 + (y - 4)^2 = 16$$

There exists two intersection points of these relations.

Using a strategy of your choice, determine the intersection points.

Answer (8, 4) (4, 0)

Justify your reasoning.

$$(x-4)^2 + (x-4-4)^2 = 16$$

$$(x-4)^2 + (x-8)^2 = 16$$

$$(x-4)(x-4) + (x-8)(x-8)$$

$$16 = (x-4)(x-4) + (x-8)(x-8)$$

$$16 = x^2 - 4x - 4x + 16 + x^2 - 8x - 8x + 64$$

$$-16 = 2x^2 - 24x + 80 - 16$$

$$2x^2 - 24x + 64$$

$$a = 2$$

$$b = -24$$

$$c = 64$$

$$(-24) \pm \sqrt{(-24)^2 - 4(2)(64)}$$

$$24 \pm \sqrt{576 - 512}$$

$$\frac{24+8}{4} = 8 \quad \leftarrow \frac{24 \pm 8}{2} \rightarrow \frac{24-8}{4} = 4$$

$$y = 8 - 4 = 4$$

$$y = 4 - 4 = 0$$

D

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Consider the two relations:

$$y = x - 4$$

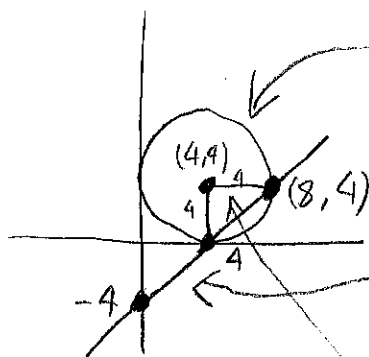
$$(x - 4)^2 + (y - 4)^2 = 16$$

There exists two intersection points of these relations.

Using a strategy of your choice, determine the intersection points.

Answer (4, 0) (8, 4)

Justify your reasoning.



$(x - 4)^2 + (y - 4)^2 = 16$ is a circle
Center (4, 4) radius = 4

$y = x - 4$
x intercept is 4

So (4, 0) is 4 away from (4, 4)
(4, 0) is one intersection

Make isosceles right triangle to find the 2nd point

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E

Consider the two relations:

$$y = x - 4$$

$$(x - 4)^2 + (y - 4)^2 = 16$$

There exists two intersection points of these relations.

Using a strategy of your choice, determine the intersection points.

Answer (10, -14) (-4, 0)

Justify your reasoning.

$$\begin{array}{l} x-4 \\ -10-4 = -14 \end{array}$$

$$(x-4)^2 + (x-4-4)^2 = 16$$

$$(x-4)^2 + (x-8)^2 =$$

$$(x-4)(x-4) \quad (x-8)(x-8)$$

$$x^2 - 8x + 16 + x^2 - 16x + 64$$

$$\frac{2x^2 - 24x + 80}{2}$$

$$x^2 - 12x + 40$$

$$(x-10)(x-4)$$

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Consider the two relations:

$$y = x - 4$$

$$(x - 4)^2 + (y - 4)^2 = 16$$

There exists two intersection points of these relations.

Using a strategy of your choice, determine the intersection points.

Answer 4/0

Justify your reasoning.

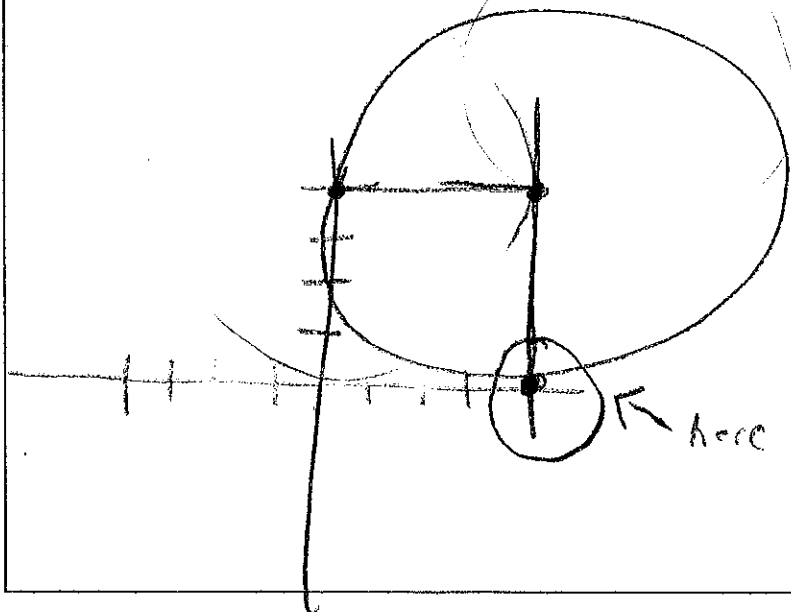
$$\sqrt{(x-4)^2 + (y-4)^2} = 4$$

$$y = x - 4 = 0$$

$$x = 4$$

$$= x - 4 + y - 4 = 4$$

$$x = 4 \quad y = 4 \quad r = 4$$



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G

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Consider the two relations:

$$y = x - 4$$

$$(x - 4)^2 + (y - 4)^2 = 16$$

There exists two intersection points of these relations.

Using a strategy of your choice, determine the intersection points.

Answer $y = 4$ $y = 16$
 $x = \frac{24+8}{4} = 8$ $\frac{24-8}{4} = 4$

Justify your reasoning.

$$(x-4)^2 + (x-4-4)^2 = 16$$

$$(x-4)^2 + (x-8)^2 = 16$$

$$(x-4)(x-4) + (x-8)(x-8)$$

$$x^2 - 4x - 4x + 16 + x^2 - 8x - 8x + 64$$

$$2x^2 - 8x + 80 = 16$$

$$\quad \quad \quad -64 \quad -16$$

$$2x^2 - 8x + 16$$

$$24 \pm \sqrt{(8)^2 - 4(2)(64)}$$

$$24 \pm \sqrt{64 - 512}$$

$$24 \pm \sqrt{-448}$$

$$\frac{24 \pm \sqrt{64}}{4} = \frac{24 \pm 8}{4}$$

$$x = \frac{24+8}{4} = 8 \quad x = \frac{24-8}{4} = 4$$