

3-19-19 5<sup>th</sup> Geo

- ① The ratio of the radii of 2 circles is 4:9. What is the ratio of the areas?

$$A = \pi r^2 \quad (4:9)^2 \quad 16:81$$

- ② The radius of a cylinder is increased by 25% and height is doubled. How much larger is the volume?

Cylinder:  $V = \pi r^2 h$

$$V = \pi (1.25r)^2 2h$$
$$\pi 1.5625r^2 \cdot 2h$$
$$3.125 \pi \cdot r^2 h$$

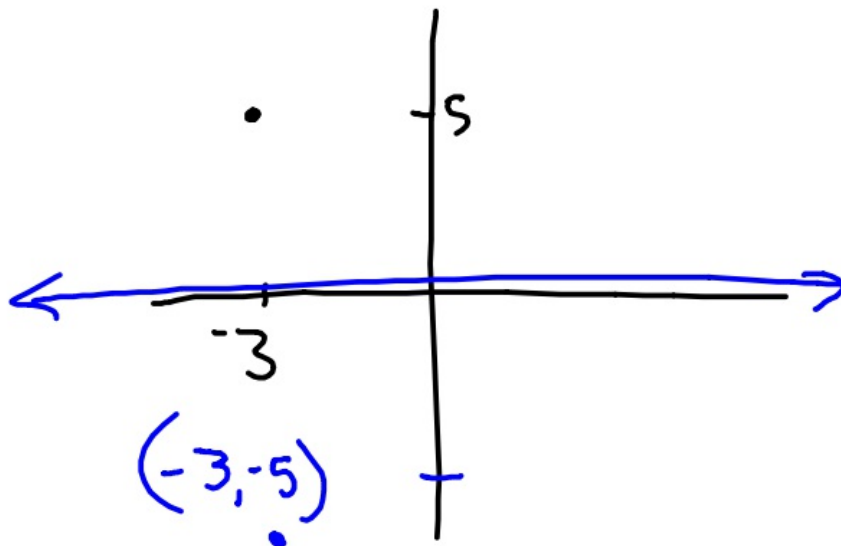
212.5% increase

N

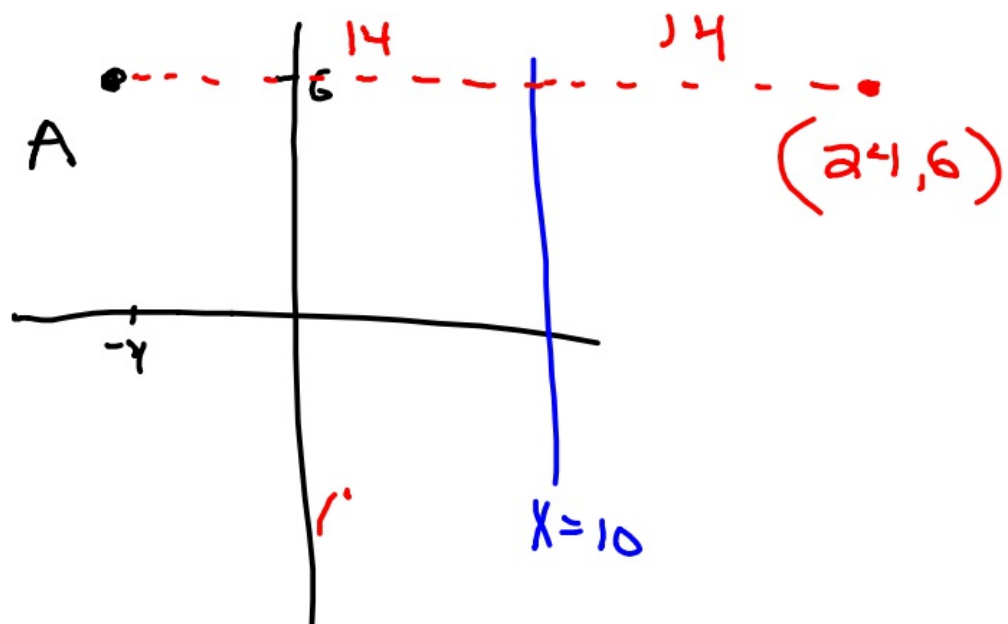
- ③ Give equation of circle that has center (2, -5) and a radius of 4.

$$(x-2)^2 + (y+5)^2 = 16$$

④ If  $(-3, 5)$  is reflected over the  $x$ -axis, where will it land?



⑤ Reflect  $A = (-4, 6)$  over the line  $x = 10$ .

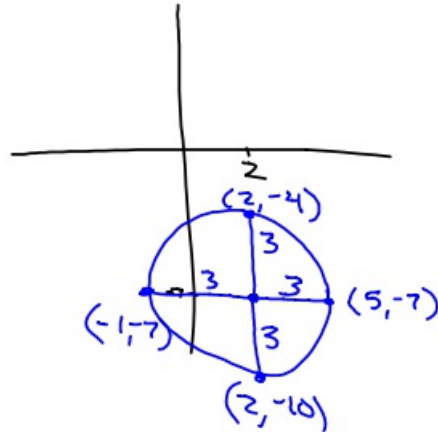


- ⑥ Give me 4 points that are on the circle

$$(x-2)^2 + (y+7)^2 = 9$$

$$\text{center} = (2, -7)$$

$$\text{radius} = 3$$



- ⑦ Reflect  $(-3, 100)$  over

a.)  $y = x$   $(100, -3)$

b.)  $y = -x$   $(-100, 3)$

- ⑧ If the point  $(-4, 10)$  has the translation  $(x-3, y+5)$ , where is the new point?

$$(-7, 15)$$

- ⑨ Is  $(-2, 6)$  on the circle

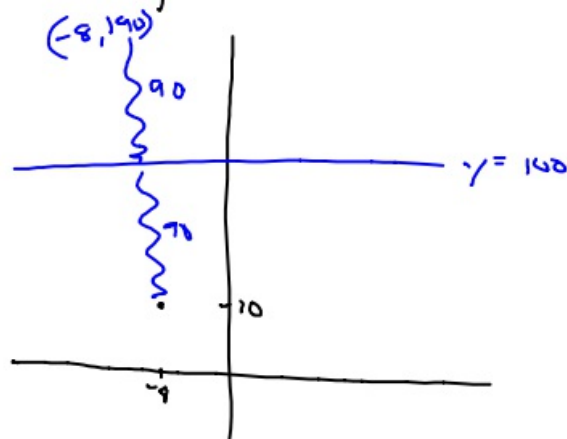
$$(x+3)^2 + (y-1)^2 = 36$$

$$(-2+3)^2 + (6-1)^2 = 36?$$

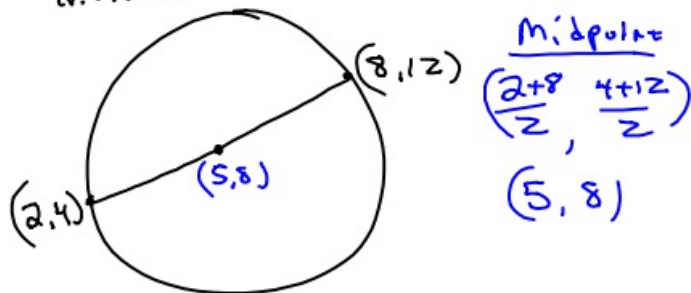
$$1^2 + 5^2 = 36?$$

$$26 = 36? \text{ NO}$$

- ⑩ Reflect  $(-8, 10)$  over line  $y = 100$ .



- ⑪ Give equation of circle that has endpoints  $(2, 4)$  and  $(8, 12)$ , which are the diameter.



Distance from  $(2, 4)$  to  $(8, 12)$

$$D = \sqrt{\Delta x^2 + \Delta y^2}$$

$$= \sqrt{6^2 + 8^2}$$

$$= 10$$

$\therefore$  radius is 5.



Center =  $5, 8$

Radius = 5

$$(x-5)^2 + (y-8)^2 = 25$$

$\checkmark 5^2$

3-19-19 6<sup>th</sup> Geo

- ① The ratio of the radii of two circles is 4:9. What is the ratio of their areas?

$$A = \pi r^2$$
$$(4:9)^2$$
$$16:81$$

- ② The radius of a cylinder is increased by 35% and its height is doubled. How much larger is its volume?

Cylinder

$$V = \pi r^2 h$$

$$V = \pi \cdot (1.35r)^2 \cdot 2 \cdot h$$

$$\pi \cdot 1.8225r^2 \cdot 2 \cdot h$$

$$\pi r^2 h \cdot 3.645$$

$$264.5\% \text{ larger}$$

H

- ③ Give equation of circle with radius of 5 and center of  $(-8, 1000)$ .

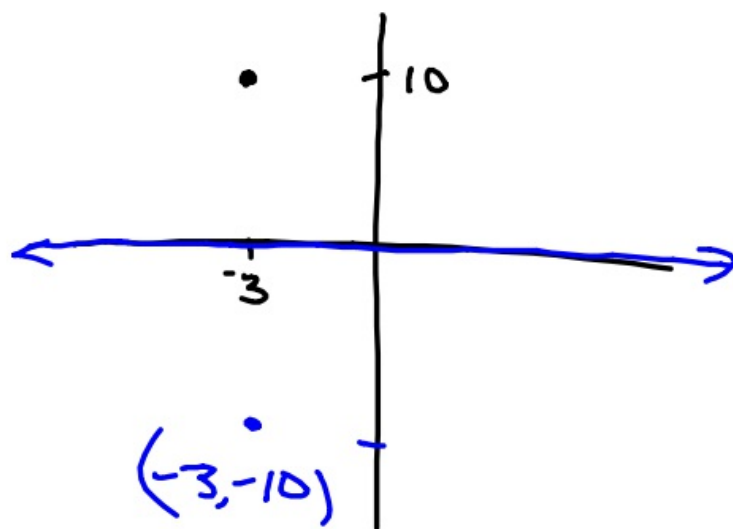
$$(x + 8)^2 + (y - 1000)^2 = 25$$

④  $x^2 + (y - 8)^2 = 100$

Center =  $(0, 8)$

Radius = 10

- ⑤ Reflect  $(-3, 10)$  over the x-axis.

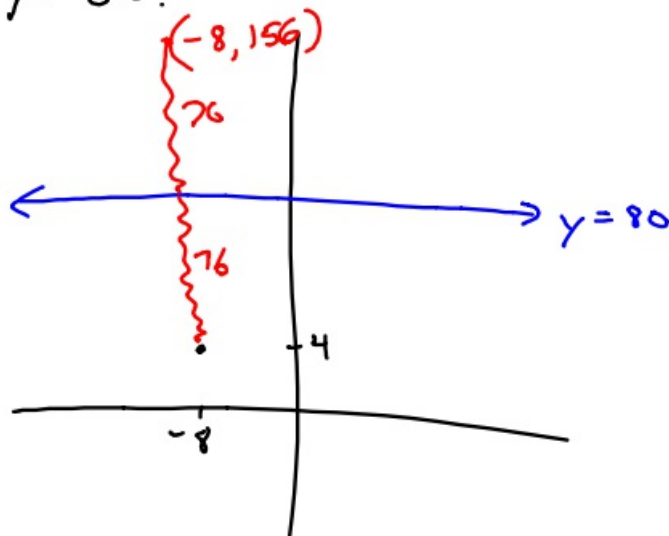


⑥ Reflect  $(-8, 10)$  over the line

a.)  $y = x$   $(10, -8)$

b.)  $y = -x$   $(-10, 8)$

⑦ Reflect  $(-8, 4)$  over the line  $y = 80$ .

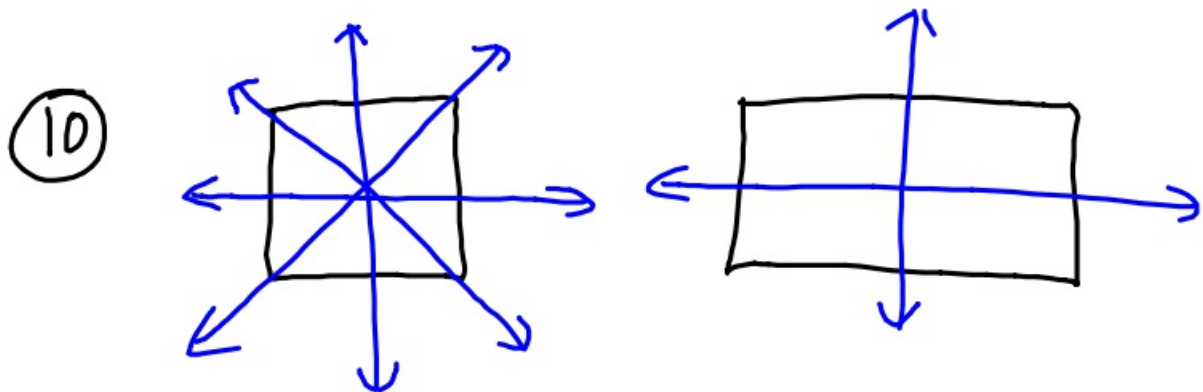


⑧ If the point  $(-2, 8)$  has a translation of  $(x+4, y-100)$ , where is the new point?

$(2, -92)$

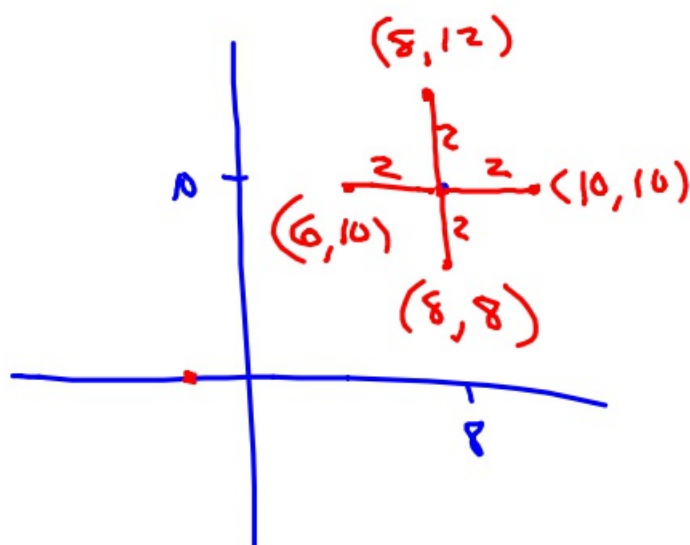
- ⑨ Translation is  $(x, y-1)$ .  
Where does  $(8, 50)$  land?

$(8, 49)$



- ⑪ Give me 4 points on the circle  $(x-8)^2 + (y-10)^2 = 4$

Center =  $(8, 10)$





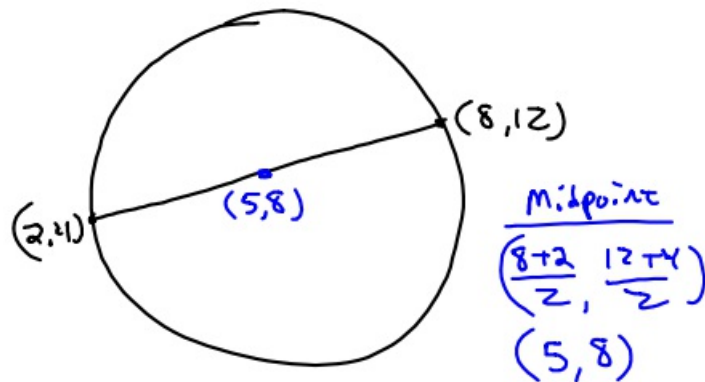
⑫ Is  $(4, 6)$  on the circle  $(x-1)^2 + (y+3)^2 = 100$

$$(4-1)^2 + (6+3)^2 = 100 ?$$

$$3^2 + 9^2 = 100 ?$$

$$90 = 100 ? \text{ NO}$$

⑬ What is the equation of the circle whose diameter has endpoints  $(2, 4)$  and  $(8, 12)$ .



Distance from  $(2, 4)$  to  $(8, 12)$

$$D = \sqrt{\Delta x^2 + \Delta y^2}$$

$$= \sqrt{6^2 + 8^2}$$

$$= \sqrt{36 + 64}$$

$$= 10 \therefore \text{radius is } 5$$

$$\text{Center} = (5, 8)$$

$$\text{Radius} = 5$$

$$(x-5)^2 + (y-8)^2 = 25$$