26. The cone shown has a base with a radius of AB. The length of AB = 6 cm and the length of BC = 10 cm. What is the volume of the cone?

A. 288π cm^3

B. 360π cm^3

C. $\frac{640}{3}\pi$ cm^3

D. 96π cm^3

$V = \frac{1}{3}\pi r^2 h$

$= \frac{1}{3}\pi(6)^2(8)$

$= 96\pi$

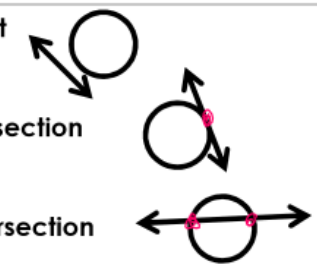
A Circle and Line May:

- Never Intersect
- 1 Point of Intersection

tangent

- 2 Points of Intersection

Secant



Solve by Graphing

- Graph the circle and the line.
- Tell the point(s) of intersection as an ordered pair.
- *Not as exact as algebraically.*

1. Solve by Graphing

$x^2 + y^2 = 4$

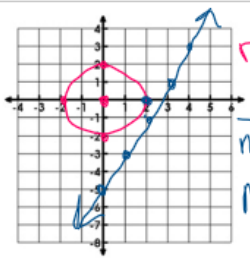
$2x - y = 5$

$y = mx + b$

$2x - y = 5$

$-y = -2x + 5$

$y = 2x - 5$



Circle

$r: 2$ $C: (0,0)$

line

$m = 2$ $b = -5$

No intersection

2. Solve by Graphing

$x^2 + y^2 = 9$

$x + y = 3$

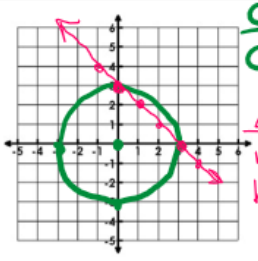
$-x \quad -x$

$y = -x + 3$

2 points

$(3,0)$

$(0,3)$



Circle

$C: (0,0)$ $r: 3$

Line

$m = -1$

$b = 3$

Solve by Algebraically

- Solve the linear for a variable.
- Substitute the linear into the circle
- Solve for the variable.
- Substitute your solution back into the linear to find the other variable.

3. Solve Algebraically

$x^2 + y^2 = 34$

$x - y = 2$

① $x - y = 2$

$+y \quad +y$

$x = y+2$

② $(y+2)^2 + y^2 = 34$

$y^2 + 4y + 4 + y^2 = 34$

$-34 \quad -34$

$\frac{2y^2}{2} + \frac{4y}{2} - \frac{30}{2} = \frac{0}{2}$

$y^2 + 2y - 15 = 0$

$\cdot : -15$

$+ : 2$

$(y-3)(y+5) = 0$

$y-3=0 \quad y+5=0$

$y=3 \quad y=-5$

y	$x = y+2$
3	5
-5	-3

2 points

(3, 5)

(-5, -3)

4. Solve Algebraically

$x^2 + y^2 = 10$

$x + 3y = 10$

① $x = -3y + 10$

② $(-3y+10)^2 + y^2 = 10$

$(-3y+10)(-3y+10) + y^2 = 10$

$9y^2 - 30y - 30y + 100 + y^2 = 10$

$9y^2 - 60y + 100 + y^2 = 10$

$10y^2 - 60y + 100 = 10$

$\frac{10y^2}{10} - \frac{60y}{10} + \frac{90}{10} = \frac{0}{10}$

$y^2 - 6y + 9 = 0$

$(y-3)(y-3) = 0$

$y-3=0 \quad y-3=0$

$y=3 \quad y=3$

③

y	$x = -3y + 10$
3	$-3(3) + 10 = 1$

(3, 1)