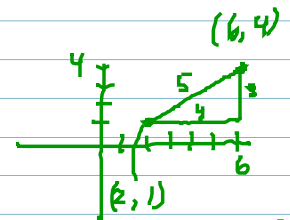
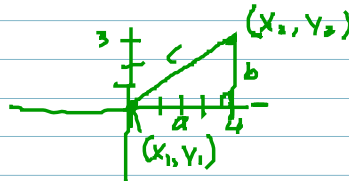
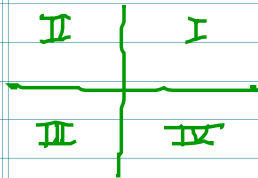


Cartesian
 Rene Descartes ←

ordered pair
 coordinates

y-coordinate - ordinate
 x-coordinate - abscissa



$$a^2 + b^2 = c^2$$

$$(x_2 - x_1)^2 + (y_2 - y_1)^2 = c^2$$

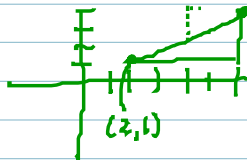
$$3^2 + 4^2 = 9 + 16 = 25 = 5^2$$

$$d = 5$$

Distance Formula → $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = d$

$$d = \sqrt{(6 - 2)^2 + (4 - 1)^2}$$

$$= \sqrt{4^2 + 3^2} = 5$$



(6, 4) Midpoint Formula

$$(\bar{x}, \bar{y}) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$= \left(\frac{2 + 6}{2}, \frac{1 + 4}{2} \right) = \left(\frac{8}{2}, \frac{5}{2} \right)$$

$$= (4, 2.5)$$

End - (7, 3)
 Mid - (2, 5)
 End - (-3, 7)

$$\bar{x} = \frac{x_1 + x_2}{2}$$

$$2 = \frac{7 + x_2}{2}$$

$$4 = 7 + x_2$$

$$-3 = x_2$$

$$\bar{y} = \frac{y_1 + y_2}{2}$$

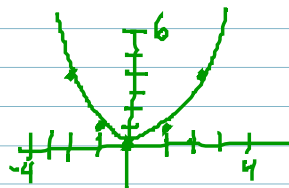
$$\frac{5}{2} = \frac{3 + y_2}{2}$$

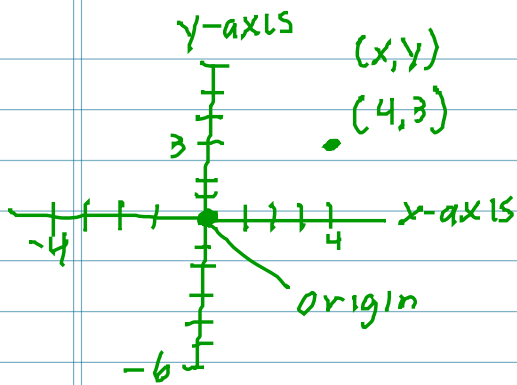
$$10 = 3 + y_2$$

$$7 = y_2$$

$y = x^2$

x	y
-2	4
-1	1
0	0
1	1
2	4

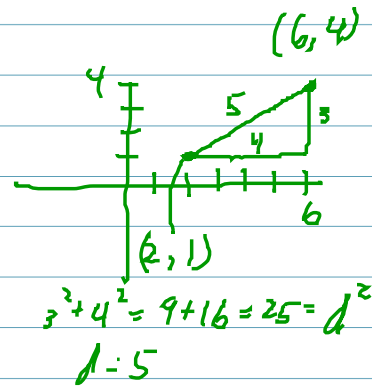
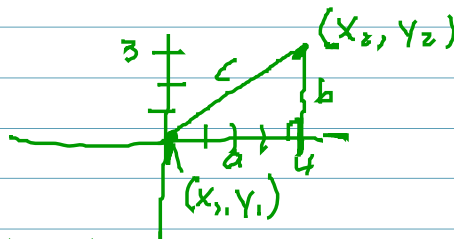
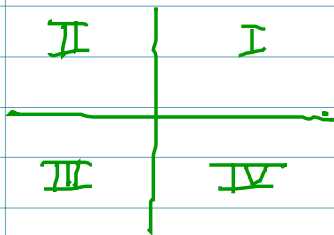




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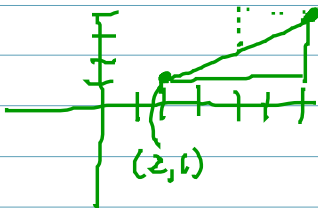
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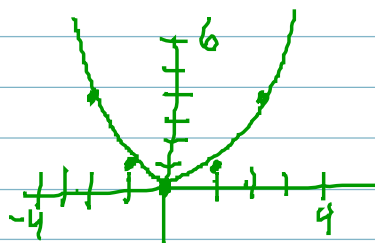
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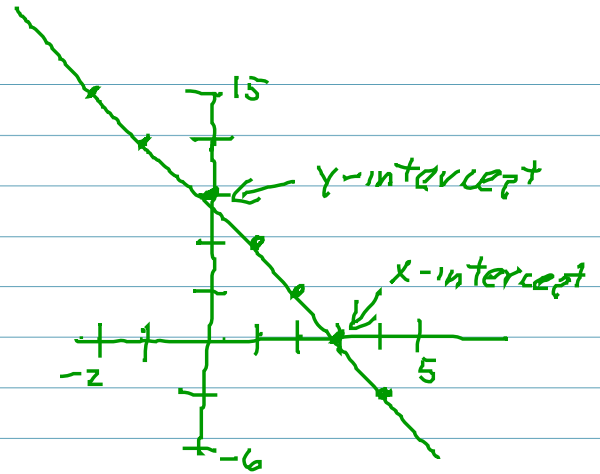


$$y + 3x - 5 = 4$$

$$y + 3x = 9$$

$$y = -3x + 9$$

x	y
-2	15
-1	12
0	9
1	6
2	3
3	0
4	-3



complete graph

x-intercept - set $y=0$
 y-intercept - set $x=0$

Symmetry

x-axis - $(x, y) \leftrightarrow (x, -y)$

y-axis - $(x, y) \leftrightarrow (-x, y)$

origin - $(x, y) \leftrightarrow (-x, -y)$

