In 1637, the famous mathematician René Descartes devised a method identifying a point's position on a flat surface. He thought of using two intersecting numbered lines known as the *x* and *y* **axes** (pronounced "ax*ees*" – this is the plural of "axis") in order to plot points. The location of each point could then be identified by a pair of numbers know as the point's **coordinates**.

This **Cartesian plane**, and its invention changed mathematics forever. In analytic geometry we can represent points, lines, circles and other curves using Descartes' system.

$Q_2$    y-axis    $Q_1$

B (-4,7)

origin(0,0)

(3,0)

A (8,5)

E

x-axis

D (-9,-1)

(0,-4) → F

C (3,-6)

$Q_3$

$Q_4$
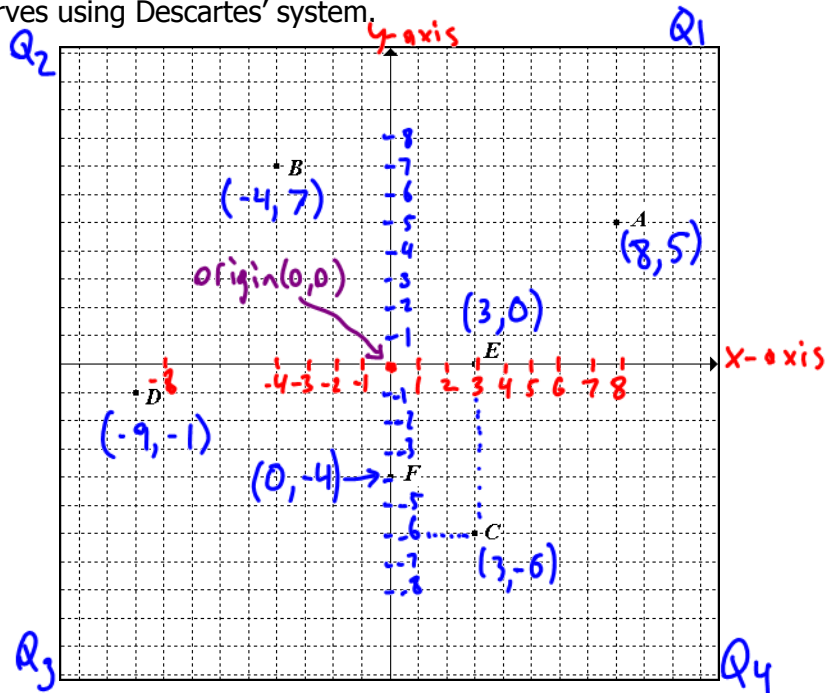
1. There are two axes, the ___X-axis___

   the ___y-axis___. Place the name of the axis at its **positive end.**

   $\dfrac{Q_2 \mid Q_1}{Q_3 \mid Q_4}$

2. Label each axis with a scale numbered at each fourth square.

3. The Cartesian plane is divided into __4__ regions called ___quadrants___.
   Number them in a counter-clockwise direction starting at the top right with **Q1, Q2,...** etc.

$(x,y)$ 4. Points are written with the __X__ co-ordinate first, and the __y__ coordinate second **inside brackets.**
   This is called an **ordered pair**. Label ordered pairs onto the points A to F.

5. The **origin** is the point where the axes intersect. The coordinates of the origin are ___(0,0)___.
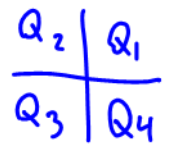
6. State where the points have:
   a) x coordinate 0 ___F(0, -4)___

   b) *y* coordinate 0 ___E (3, 0)___

   c) *x* coordinate negative $Q_2$ or $Q_3$ ___B(-4,7) and D(-9,-1)___

   d) *y* coordinate negative $Q_3$ or $Q_4$ ___C(3,-6) and F(0,-4) and D(-9,-1)___

   e) *x* coordinate negative and *y* coordinate positive ___B(-4,7)___

   f) *x* coordinate –4 ___B (-4,7)___

   g) *y* coordinate 3 ___n/A___