EXAMEN INTERCICLO

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SIMULACION

In [1]:
```
import matplotlib.pyplot as plt
import numpy as np
import math as mt
import numpy as np
```

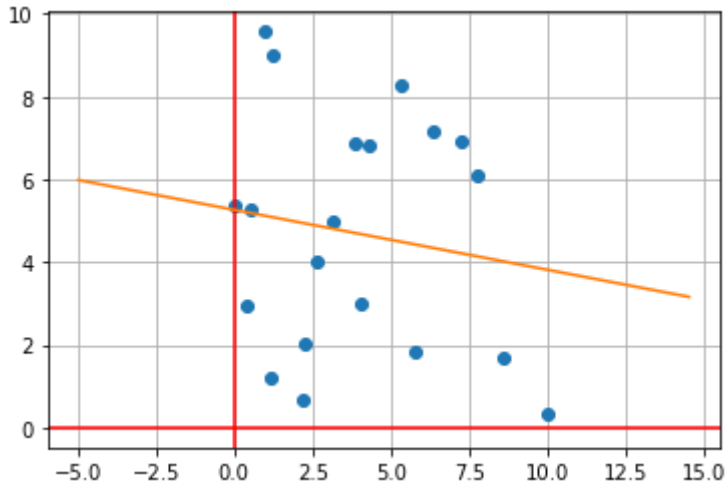
In [2]:
```
def ecuacion_recta():
    x = np.random.random(20)*10
    #print(x)
    y = np.random.random(20)*10
    #print(y)
    #return x,y
    X = np.array(x.reshape((20,1)))
    Y = np.array(y.reshape((20,1)))
    print(X)
    print(Y)
    """plt.plot(X, Y, 'o')
    plt.axhline(y = 0, color = "blue")
    plt.axvline(x = 0, color = "blue")
    plt.grid()
    plt.show()"""

    ex=sum(X)
    ey=sum(Y)
    exy=sum(X*Y)
    exx=sum(X*X)
    lon=len(X)
    m=(lon*exy-ex*ey)/(lon*exx-mt.pow(abs(ex),2))
    b=(ey*exx-ex*exy)/(lon*exx-mt.pow(abs(ex),2))
    ecua=""
    m=round(m[0],4)
    b=round(b[0],4)
    if (b < 0):
        ecua='y = {}x {}'
    else:
        ecua='y = {}x + {}'
    print(ecua.format(m,b))
    fu=lambda x: m*x+b
    li=np.arange(min(X)-5.0,max(X)+5.0,0.5)
    plt.plot(X,Y,'o')
    plt.axhline(y=0,color="red")
    plt.axvline(x=0,color="red")
    plt.plot(li,fu(li))
    plt.grid(True)
    plt.show()
```

In [3]:
```
ecuacion_recta()
```

```
[[0.02859038]
 [4.08227561]
 [7.22827427]
 [8.61989789]
 [0.55215252]
 [7.76850831]
 [5.7604233 ]
 [9.98882515]
```

```
 [4.33306808]
 [2.21137173]
 [0.37330902]
 [1.16061141]
 [1.20651423]
 [1.00663021]
 [2.26947856]
 [3.15181507]
 [3.86366231]
 [2.61059681]
 [6.38652406]
 [5.32928513]]
[[5.36480609]
 [2.97725338]
 [6.92305364]
 [1.67554318]
 [5.27762217]
 [6.09781942]
 [1.84542869]
 [0.32024387]
 [6.83618665]
 [0.67496699]
 [2.93423913]
 [1.19144144]
 [8.99676112]
 [9.56687387]
 [2.02954558]
 [4.96610244]
 [6.85389057]
 [3.99599049]
 [7.17251888]
 [8.26813362]]
y = -0.1447x + 5.2621
```



In [ ]: