

pip install apriori

pip install numpy

pip install pandas

In [ ]:



*# Importing the required libraries*

**import** numpy **as** np

**import** pandas **as** pd

**from** mlxtend.frequent\_patterns **import** apriori, association\_rules

In [13]:



*# Loading and exploring the data*

data **=** pd.read\_excel('Online Retail (4).xlsx')

data.head()

Out[13]:

|  | **InvoiceNo** | **StockCode** | **Description** | **Quantity** | **InvoiceDate** | **UnitPrice** | **CustomerID** | **Country** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | 536365 | 85123A | WHITE HANGING HEART T-LIGHT HOLDER | 6 | 2010-12-01 08:26:00 | 2.55 | 17850.0 | United Kingdom |
| **1** | 536365 | 71053 | WHITE METAL LANTERN | 6 | 2010-12-01 08:26:00 | 3.39 | 17850.0 | United Kingdom |
| **2** | 536365 | 84406B | CREAM CUPID HEARTS COAT HANGER | 8 | 2010-12-01 08:26:00 | 2.75 | 17850.0 | United Kingdom |
| **3** | 536365 | 84029G | KNITTED UNION FLAG HOT WATER BOTTLE | 6 | 2010-12-01 08:26:00 | 3.39 | 17850.0 | United Kingdom |
| **4** | 536365 | 84029E | RED WOOLLY HOTTIE WHITE HEART. | 6 | 2010-12-01 08:26:00 | 3.39 | 17850.0 | United Kingdom |

In [14]:



data.columns

Out[14]:

Index(['InvoiceNo', 'StockCode', 'Description', 'Quantity', 'InvoiceDate',

'UnitPrice', 'CustomerID', 'Country'],

dtype='object')

In [16]:



data.Country.unique()

Out[16]:

array(['United Kingdom', 'France', 'Australia', 'Netherlands', 'Germany',

'Norway', 'EIRE', 'Switzerland', 'Spain', 'Poland', 'Portugal',

'Italy', 'Belgium', 'Lithuania', 'Japan', 'Iceland',

'Channel Islands', 'Denmark', 'Cyprus', 'Sweden', 'Austria',

'Israel', 'Finland', 'Bahrain', 'Greece', 'Hong Kong', 'Singapore',

'Lebanon', 'United Arab Emirates', 'Saudi Arabia',

'Czech Republic', 'Canada', 'Unspecified', 'Brazil', 'USA',

'European Community', 'Malta', 'RSA'], dtype=object)

In [20]:



*# Stripping extra spaces in the description*

data['Description'] **=** data['Description'].str.strip()

*# Dropping the rows without any invoice number*

data.dropna(axis **=** 0, subset **=**['InvoiceNo'], inplace **=** **True**)

data['InvoiceNo'] **=** data['InvoiceNo'].astype('str')

*# Dropping all transactions which were done on credit*

data **=** data[**~**data['InvoiceNo'].str.contains('C')]

data.head()

Out[20]:

|  | **InvoiceNo** | **StockCode** | **Description** | **Quantity** | **InvoiceDate** | **UnitPrice** | **CustomerID** | **Country** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | 536365 | 85123A | WHITE HANGING HEART T-LIGHT HOLDER | 6 | 2010-12-01 08:26:00 | 2.55 | 17850.0 | United Kingdom |
| **1** | 536365 | 71053 | WHITE METAL LANTERN | 6 | 2010-12-01 08:26:00 | 3.39 | 17850.0 | United Kingdom |
| **2** | 536365 | 84406B | CREAM CUPID HEARTS COAT HANGER | 8 | 2010-12-01 08:26:00 | 2.75 | 17850.0 | United Kingdom |
| **3** | 536365 | 84029G | KNITTED UNION FLAG HOT WATER BOTTLE | 6 | 2010-12-01 08:26:00 | 3.39 | 17850.0 | United Kingdom |
| **4** | 536365 | 84029E | RED WOOLLY HOTTIE WHITE HEART. | 6 | 2010-12-01 08:26:00 | 3.39 | 17850.0 | United Kingdom |

In [23]:



data['Country'].value\_counts()

Out[23]:

United Kingdom 487622

Germany 9042

France 8408

EIRE 7894

Spain 2485

Netherlands 2363

Belgium 2031

Switzerland 1967

Portugal 1501

Australia 1185

Norway 1072

Italy 758

Channel Islands 748

Finland 685

Cyprus 614

Sweden 451

Unspecified 446

Austria 398

Denmark 380

Poland 330

Japan 321

Israel 295

Hong Kong 284

Singapore 222

Iceland 182

USA 179

Canada 151

Greece 145

Malta 112

United Arab Emirates 68

European Community 60

RSA 58

Lebanon 45

Lithuania 35

Brazil 32

Czech Republic 25

Bahrain 18

Saudi Arabia 9

Name: Country, dtype: int64

In [25]:



data.shape

Out[25]:

(532621, 8)

In [54]:



*# Transactions done in France*

my\_basket**=** (data[data['Country'] **==**"France"]

.groupby(['InvoiceNo', 'Description'])['Quantity']

.sum().unstack().reset\_index().fillna(0)

.set\_index('InvoiceNo'))

In [55]:



*# viewing Transactions basket*

my\_basket.head()

Out[55]:

| **Description** | **10 COLOUR SPACEBOY PEN** | **12 COLOURED PARTY BALLOONS** | **12 EGG HOUSE PAINTED WOOD** | **12 MESSAGE CARDS WITH ENVELOPES** | **12 PENCIL SMALL TUBE WOODLAND** | **12 PENCILS SMALL TUBE RED RETROSPOT** | **12 PENCILS SMALL TUBE SKULL** | **12 PENCILS TALL TUBE POSY** | **12 PENCILS TALL TUBE RED RETROSPOT** | **12 PENCILS TALL TUBE WOODLAND** | **...** | **WRAP VINTAGE PETALS DESIGN** | **YELLOW COAT RACK PARIS FASHION** | **YELLOW GIANT GARDEN THERMOMETER** | **YELLOW SHARK HELICOPTER** | **ZINC STAR T-LIGHT HOLDER** | **ZINC FOLKART SLEIGH BELLS** | **ZINC HERB GARDEN CONTAINER** | **ZINC METAL HEART DECORATION** | **ZINC T-LIGHT HOLDER STAR LARGE** | **ZINC T-LIGHT HOLDER STARS SMALL** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **InvoiceNo** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **536370** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **536852** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **536974** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **537065** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **537463** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

5 rows × 1563 columns

In [56]:



*# Transactions done in the United Kingdom*

my\_basket **=** (data[data['Country'] **==**"United Kingdom"]

.groupby(['InvoiceNo', 'Description'])['Quantity']

.sum().unstack().reset\_index().fillna(0)

.set\_index('InvoiceNo'))

In [57]:



*# viewing Transactions basket*

my\_basket.head()

Out[57]:

| **Description** | **\*Boombox Ipod Classic** | **\*USB Office Mirror Ball** | **10 COLOUR SPACEBOY PEN** | **12 COLOURED PARTY BALLOONS** | **12 DAISY PEGS IN WOOD BOX** | **12 EGG HOUSE PAINTED WOOD** | **12 HANGING EGGS HAND PAINTED** | **12 IVORY ROSE PEG PLACE SETTINGS** | **12 MESSAGE CARDS WITH ENVELOPES** | **12 PENCIL SMALL TUBE WOODLAND** | **...** | **wrongly coded 20713** | **wrongly coded 23343** | **wrongly coded-23343** | **wrongly marked** | **wrongly marked 23343** | **wrongly marked carton 22804** | **wrongly marked. 23343 in box** | **wrongly sold (22719) barcode** | **wrongly sold as sets** | **wrongly sold sets** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **InvoiceNo** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **536365** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **536366** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **536367** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **536368** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **536369** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

5 rows × 4175 columns

In [58]:



*# Transactions done in Portugal*

my\_basket **=** (data[data['Country'] **==**"Portugal"]

.groupby(['InvoiceNo', 'Description'])['Quantity']

.sum().unstack().reset\_index().fillna(0)

.set\_index('InvoiceNo'))

In [59]:



*# viewing Transactions basket*

my\_basket.head()

Out[59]:

| **Description** | **10 COLOUR SPACEBOY PEN** | **12 PENCIL SMALL TUBE WOODLAND** | **12 PENCILS SMALL TUBE RED RETROSPOT** | **12 PENCILS TALL TUBE POSY** | **12 PENCILS TALL TUBE RED RETROSPOT** | **12 PENCILS TALL TUBE WOODLAND** | **20 DOLLY PEGS RETROSPOT** | **3 PIECE SPACEBOY COOKIE CUTTER SET** | **3 STRIPEY MICE FELTCRAFT** | **36 FOIL HEART CAKE CASES** | **...** | **WRAP FLOWER SHOP** | **WRAP GINGHAM ROSE** | **WRAP PAISLEY PARK** | **WRAP PINK FAIRY CAKES** | **WRAP RED APPLES** | **WRAP RED VINTAGE DOILY** | **WRAP SUKI AND FRIENDS** | **YOU'RE CONFUSING ME METAL SIGN** | **ZINC FOLKART SLEIGH BELLS** | **ZINC WIRE KITCHEN ORGANISER** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **InvoiceNo** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **536990** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **537246** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **537818** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **537915** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **538311** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

5 rows × 713 columns

In [60]:



my\_basket **=** (data[data['Country'] **==**"Sweden"]

.groupby(['InvoiceNo', 'Description'])['Quantity']

.sum().unstack().reset\_index().fillna(0)

.set\_index('InvoiceNo'))

In [61]:



*# viewing Transactions basket*

my\_basket.head()

Out[61]:

| **Description** | **12 PENCIL SMALL TUBE WOODLAND** | **12 PENCILS SMALL TUBE RED RETROSPOT** | **12 PENCILS SMALL TUBE SKULL** | **12 PENCILS TALL TUBE WOODLAND** | **3 PIECE SPACEBOY COOKIE CUTTER SET** | **3 RAFFIA RIBBONS 50'S CHRISTMAS** | **3 RAFFIA RIBBONS VINTAGE CHRISTMAS** | **3 TIER CAKE TIN RED AND CREAM** | **3 TRADITIONAl BISCUIT CUTTERS SET** | **36 DOILIES DOLLY GIRL** | **...** | **WOODEN STAR CHRISTMAS SCANDINAVIAN** | **WOODEN TREE CHRISTMAS SCANDINAVIAN** | **WOODLAND CHARLOTTE BAG** | **WOODLAND SMALL RED FELT HEART** | **WORLD WAR 2 GLIDERS ASSTD DESIGNS** | **WRAP VINTAGE DOILY** | **WRAP ALPHABET DESIGN** | **WRAP DOLLY GIRL** | **WRAP RED VINTAGE DOILY** | **ZINC WILLIE WINKIE CANDLE STICK** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **InvoiceNo** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **538848** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **539338** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 144.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 576.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **540040** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **542428** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **542911** | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 25.0 | 0.0 | 0.0 | 0.0 |

5 rows × 261 columns

In [74]:



*# Defining the hot encoding function to make the data suitable*

*# for the concerned libraries*

**def** my\_encode\_units(x):

**if**(x**<=** 0):

**return** 0

**if**(x**>=** 1):

**return** 1

In [75]:



*# Remove 'postage' as an item*

my\_basket\_sets**=**my\_basket.applymap(my\_encode\_units)

my\_basket\_sets\_drop('POSTAGE',inplace**=True**, axis**=**1)

---------------------------------------------------------------------------

NameError Traceback (most recent call last)

<ipython-input-75-e10a48908eff> in <module>

**1** my\_basket\_sets=my\_basket.applymap(my\_encode\_units)

----> 2 my\_basket\_sets\_drop('POSTAGE',inplace=True, axis=1)

NameError: name 'my\_basket\_sets\_drop' is not defined

In [79]:



*# Building the model*

my\_frq\_item\_set **=** apriori(my\_basket\_sets, min\_support **=** 0.07, use\_colnames **=** **True**)

In [80]:



rules **=** association\_rules(my\_frq\_item\_set, metric **=**"lift", min\_threshold **=** 1)

In [81]:



rules.head(100)

Out[81]:

|  | **antecedents** | **consequents** | **antecedent support** | **consequent support** | **support** | **confidence** | **lift** | **leverage** | **conviction** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | (MINI PAINT SET VINTAGE) | (60 CAKE CASES DOLLY GIRL DESIGN) | 0.166667 | 0.111111 | 0.083333 | 0.500000 | 4.500000 | 0.064815 | 1.777778 |
| **1** | (60 CAKE CASES DOLLY GIRL DESIGN) | (MINI PAINT SET VINTAGE) | 0.111111 | 0.166667 | 0.083333 | 0.750000 | 4.500000 | 0.064815 | 3.333333 |
| **2** | (PACK OF 60 SPACEBOY CAKE CASES) | (60 CAKE CASES DOLLY GIRL DESIGN) | 0.111111 | 0.111111 | 0.083333 | 0.750000 | 6.750000 | 0.070988 | 3.555556 |
| **3** | (60 CAKE CASES DOLLY GIRL DESIGN) | (PACK OF 60 SPACEBOY CAKE CASES) | 0.111111 | 0.111111 | 0.083333 | 0.750000 | 6.750000 | 0.070988 | 3.555556 |
| **4** | (60 CAKE CASES DOLLY GIRL DESIGN) | (PACK OF 72 RETROSPOT CAKE CASES) | 0.111111 | 0.111111 | 0.083333 | 0.750000 | 6.750000 | 0.070988 | 3.555556 |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **95** | (SET OF 12 MINI LOAF BAKING CASES) | (SET OF 6 TEA TIME BAKING CASES) | 0.083333 | 0.083333 | 0.083333 | 1.000000 | 12.000000 | 0.076389 | inf |
| **96** | (SET OF 3 CAKE TINS PANTRY DESIGN) | (SET OF 60 PANTRY DESIGN CAKE CASES) | 0.194444 | 0.083333 | 0.083333 | 0.428571 | 5.142857 | 0.067130 | 1.604167 |
| **97** | (SET OF 60 PANTRY DESIGN CAKE CASES) | (SET OF 3 CAKE TINS PANTRY DESIGN) | 0.083333 | 0.194444 | 0.083333 | 1.000000 | 5.142857 | 0.067130 | inf |
| **98** | (SET OF 3 CAKE TINS PANTRY DESIGN) | (VICTORIAN SEWING KIT) | 0.194444 | 0.083333 | 0.083333 | 0.428571 | 5.142857 | 0.067130 | 1.604167 |
| **99** | (VICTORIAN SEWING KIT) | (SET OF 3 CAKE TINS PANTRY DESIGN) | 0.083333 | 0.194444 | 0.083333 | 1.000000 | 5.142857 | 0.067130 | inf |

100 rows × 9 columns

In [98]:



*# Making Recomendation*

my\_basket\_sets['SET OF 60 PANTRY DESIGN CAKE CASES'].sum()

Out[98]:

3

In [99]:



my\_basket\_sets['SET OF 3 CAKE TINS PANTRY DESIGN'].sum()

Out[99]:

7

In [100]:



*# filtering rules based on condition*

rules[(rules['lift']**>=**3)**&**

(rules['confidence']**>=**0.3)]

Out[100]:

|  | **antecedents** | **consequents** | **antecedent support** | **consequent support** | **support** | **confidence** | **lift** | **leverage** | **conviction** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | (MINI PAINT SET VINTAGE) | (60 CAKE CASES DOLLY GIRL DESIGN) | 0.166667 | 0.111111 | 0.083333 | 0.500000 | 4.500000 | 0.064815 | 1.777778 |
| **1** | (60 CAKE CASES DOLLY GIRL DESIGN) | (MINI PAINT SET VINTAGE) | 0.111111 | 0.166667 | 0.083333 | 0.750000 | 4.500000 | 0.064815 | 3.333333 |
| **2** | (PACK OF 60 SPACEBOY CAKE CASES) | (60 CAKE CASES DOLLY GIRL DESIGN) | 0.111111 | 0.111111 | 0.083333 | 0.750000 | 6.750000 | 0.070988 | 3.555556 |
| **3** | (60 CAKE CASES DOLLY GIRL DESIGN) | (PACK OF 60 SPACEBOY CAKE CASES) | 0.111111 | 0.111111 | 0.083333 | 0.750000 | 6.750000 | 0.070988 | 3.555556 |
| **4** | (60 CAKE CASES DOLLY GIRL DESIGN) | (PACK OF 72 RETROSPOT CAKE CASES) | 0.111111 | 0.111111 | 0.083333 | 0.750000 | 6.750000 | 0.070988 | 3.555556 |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **223** | (MAGIC DRAWING SLATE DOLLY GIRL, VICTORIAN SEW... | (SET OF 3 CAKE TINS PANTRY DESIGN, MAGIC DRAWI... | 0.083333 | 0.083333 | 0.083333 | 1.000000 | 12.000000 | 0.076389 | inf |
| **224** | (SET OF 3 CAKE TINS PANTRY DESIGN) | (MAGIC DRAWING SLATE DOLLY GIRL, MAGIC DRAWING... | 0.194444 | 0.083333 | 0.083333 | 0.428571 | 5.142857 | 0.067130 | 1.604167 |
| **225** | (MAGIC DRAWING SLATE PURDEY) | (MAGIC DRAWING SLATE DOLLY GIRL, SET OF 3 CAKE... | 0.083333 | 0.083333 | 0.083333 | 1.000000 | 12.000000 | 0.076389 | inf |
| **226** | (VICTORIAN SEWING KIT) | (SET OF 3 CAKE TINS PANTRY DESIGN, MAGIC DRAWI... | 0.083333 | 0.083333 | 0.083333 | 1.000000 | 12.000000 | 0.076389 | inf |
| **227** | (MAGIC DRAWING SLATE DOLLY GIRL) | (SET OF 3 CAKE TINS PANTRY DESIGN, MAGIC DRAWI... | 0.083333 | 0.083333 | 0.083333 | 1.000000 | 12.000000 | 0.076389 | inf |

194 rows × 9 columns