Great Powder

0 points possible (ungraded)

You own Great Powder, a small ski shop in the Austrian Alps near Innsbruck. You notice that sales peak in the late fall as tourist flock from all over europe to hit the ski slopes. Looking back at sales over the previous years, you think that there may be a connection to the time of the year that winter hits and the amount of sales in a given year. When winter arrives earlier, sales over the year seem to be larger. When winter arrives later, sales over the year seem to be smaller.

You want to check your last 10 years worth of data to see if this has validity. To maintain consistency, you decide that winter has arrived when .3 meters of snow have accumulated on the ground. Your data is below.

Year	Winter arrival day	Seasonal Sales (in Euros)
2006	320	120342
2007	324	114397
2008	340	102328
2009	314	134786
2010	322	132034
2011	342	98078
2012	302	138965
2013	317	136753
2014	338	114566
2015	326	128435

Calculate the correlation and covariance between these two data sets.

What is the (population) covariance?
Round to the nearest whole number.

-145469

-145469

−145469

Explanation
In your favorite spreadsheet program, use the covariance function. In Excel, Google Sheets and Libre Office, the syntax is simply =COVAR.

What is the correlation?
Write your answer as a number with at least 4 decimal places.

-0.8856

-0.8856

−0.8856

Explanation
In your favorite spreadsheet program, use the correlation function. In Excel, Google Sheets and Libre Office, the syntax is simply =CORREL.