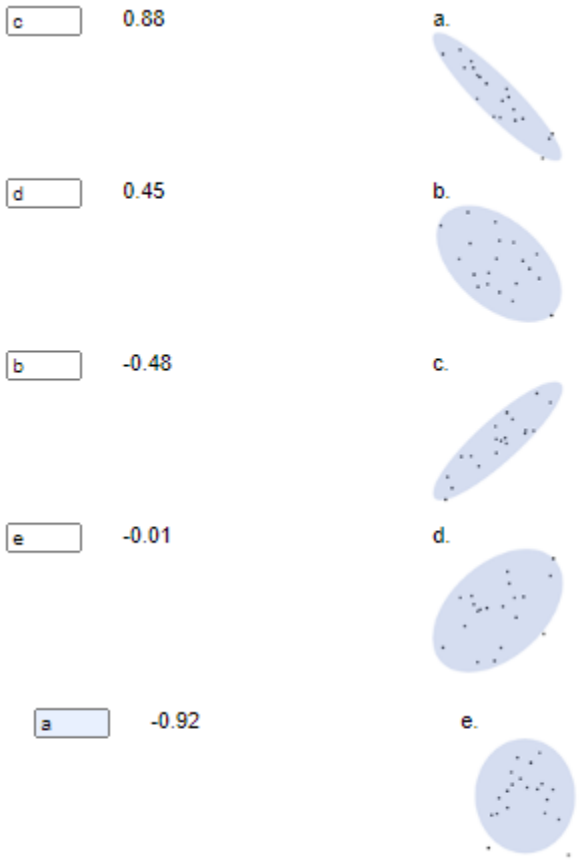
Questions Module 5.1

In the text box beside each of the five correlation coefficients below, enter the letter of the appropriate scatterplot and density ellipse. Scroll down if necessary and click the **Check My Answer** button. The correct answer will display below the button.



There is a negative correlation between Florida drownings and ice cream consumption. As annual ice cream consumption increases, annual drownings decrease. What is the most reasonable explanation for this apparent relationship?

- *a.* Eating ice cream prevents drowning.
- *b.* Eating ice cream makes you a better swimmer.
- *c.* Both rates are, coincidentally, changing over time.
- *d.* Parents don't let children swim after eating ice cream.
- *e.* Good swimmers like ice cream.

Incorrect.
The correct answer is **c**. Both rates are changing over time. With population growth and the growth of the tourist industry in Florida, more ice cream is being eaten. At the same time, more actions are being taken to prevent drownings.

There is a strong positive correlation between shoe size and reading performance for children whose ages are from 6 to 12. What is the most reasonable explanation for this apparent relationship?

- *a.* Children with larger feet are smarter.
- *b.* The age of the children explains the apparent relationship.
- *c.* Smarter children have larger feet.
- *d.* Reading makes your feet grow.

Incorrect.
The correct answer is **b**. Older children have larger shoe sizes and also tend to read better.

Recall that the White Polymer improvement team is tasked with improving **Yield**, and that **Yield** is related to both **MFI** and **CI**.

The specification limits for **MFI** are 192 to 198, and the lower specification limit for **CI** is 80.

What did you learn from the correlation analysis in the previous exercise that might help the team achieve its goal?

You learned that **MFI** is strongly correlated with **M%**. Higher **M%** is associated with higher **MFI**. **MFI** is not strongly correlated with the other input variables. There is a curvilinear relationship between **CI** and **Xf**, but **CI** isn't correlated with the other variables. If you want to achieve the specification limits, you'll need to develop a better understanding of these relationships. You might be able to find operating ranges for these variables to enable you to achieve the specifications.