

Feedback — Week 4

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You submitted this quiz on **Sun 20 Oct 2013 7:58 PM PDT (UTC -0700)**. You got a score of **9.00** out of **10.00**. You can [attempt again](#), if you'd like.

Salary can be influenced by many variables. Among these, years of professional experience and total courses completed in college are critical. This week we test this hypothesis with a simulated [dataset](#) including an outcome variable, salary, and two predictors, years of experience and courses completed. Here are a few questions based on what was covered in the lectures and the lab. Have fun!

Question 1

What is the correlation between salary and years of professional experience?

You entered:

Your Answer		Score	Explanation
0.74	✓	1.00	
Total		1.00 / 1.00	

Question Explanation

```
cor.test(data$salary, data$years)
```

Question 2

What is the correlation between salary and courses completed?

You entered:

Your Answer**Score****Explanation**

0.54



1.00

Total

1.00 / 1.00

Question Explanation

```
cor.test(data$salary, data$courses)
```

Question 3

What is the percentage of variance explained in a regression model with salary as the outcome variable and professional experience as the predictor variable?

You entered:

55

Your Answer**Score****Explanation**

55



1.00

Total

1.00 / 1.00

Question Explanation

```
summary(model1 = lm(data$salary ~ data$years))
```

Question 4

Compared to the model from Question 3, would a regression model predicting salary from the number of courses be considered a better fit to the data?

Your Answer**Score****Explanation**☐ Yes

● No



1.00

Total

1.00 / 1.00

Question Explanation

```
summary(model2 = lm(data$salary ~ data$courses))
```

Question 5

Now let's include both predictors (years of professional experience and courses completed) in a regression model with salary as the outcome. Now what is the percentage of variance explained?

You entered:

65

Your Answer**Score****Explanation**

65



1.00

Total

1.00 / 1.00

Question Explanation

```
summary(model3 = lm(data$salary ~ data$years + data$courses))
```

Question 6

What is the standardized regression coefficient for years of professional experience, predicting salary?

You entered:

0.74

Your Answer**Score****Explanation**

0.74	✓	1.00
Total		1.00 / 1.00

Question 7

What is the standardized regression coefficient for courses completed, predicting salary?

You entered:

0.54

Your Answer	Score	Explanation
0.54	✓	1.00
Total		1.00 / 1.00

Question 8

What is the mean of the salary distribution predicted by the model including both years of professional experience and courses completed as predictors? (with 0 decimal places)

You entered:

Your Answer	Score	Explanation
	✗	0.00
Total		0.00 / 1.00

Question Explanation

data.predicted = fitted(model3) AND mean(data.predicted)

Question 9

What is the mean of the residual distribution for the model predicting salary from both years of professional experience and courses completed? (with 0 decimal places)

You entered:

0

Your Answer		Score	Explanation
0	✓	1.00	
Total		1.00 / 1.00	

Question Explanation

```
data.error = resid(model3) AND mean(data.error)
```

Question 10

Are the residuals from the regression model with both predictors normally distributed?

Your Answer		Score	Explanation
<input checked="" type="radio"/> Yes	✓	1.00	
<input type="radio"/> No			
Total		1.00 / 1.00	

Question Explanation

```
hist(data.error)
```