✓ **Congratulations! You passed!**

Grade received 80%   **Latest Submission Grade** 80%   **To pass** 70% or higher

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1.   1 / 1 point

Which of the following is a valid step used during feature scaling?

◉ Subtract the mean (average) from each value and then divide by the (max - min).

○ Add the mean (average) from each value and and then divide by the (max - min).

✓ **Correct**
This is called mean normalization.

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2. Suppose a friend ran gradient descent three separate times with three choices of the learning rate α and plotted the learning curves for each (cost J for each   1 / 1 point
iteration).

For which case, A or B, was the learning rate α likely too large?

○ case A only

◉ case B only

○ Both Cases A and B

○ Neither Case A nor B

✓ **Correct**
The cost is increasing as training continues, which likely indicates that the learning rate alpha is too large.

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3. Of the circumstances below, for which one is feature scaling particularly helpful?   1 / 1 point

◉ Feature scaling is helpful when one feature is much larger (or smaller) than another feature.

○ Feature scaling is helpful when all the features in the original data (before scaling is applied) range from 0 to 1.

✓ **Correct**
For example, the "house size" in square feet may be as high as 2,000, which is much larger than the feature "number of bedrooms" having a value between
1 and 5 for most houses in the modern era.

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4.   1 / 1 point

You are helping a grocery store predict its revenue, and have data on its items sold per week, and price per item. What could be a useful engineered feature?

◉ For each product, calculate the number of items sold times price per item.

○ For each product, calculate the number of items sold divided by the price per item.

✓ **Correct**
This feature can be interpreted as the revenue generated for each product.

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5. True/False? With polynomial regression, the predicted values f_w,b(x) does not necessarily have to be a straight line (or linear) function of the input feature x.   0 / 1 point

○ True

◉ False

✗ **Incorrect**
A polynomial function can be non-linear.